

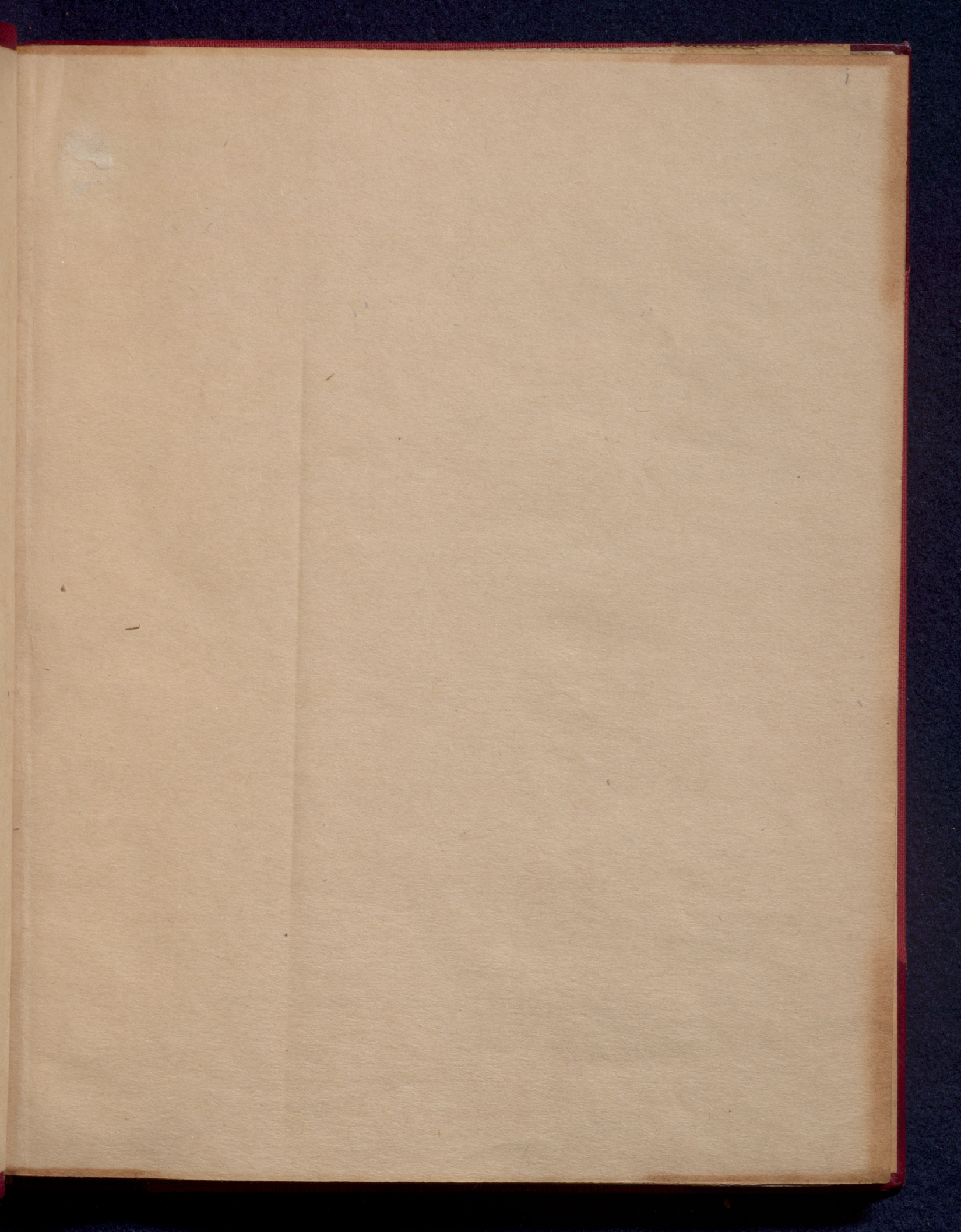
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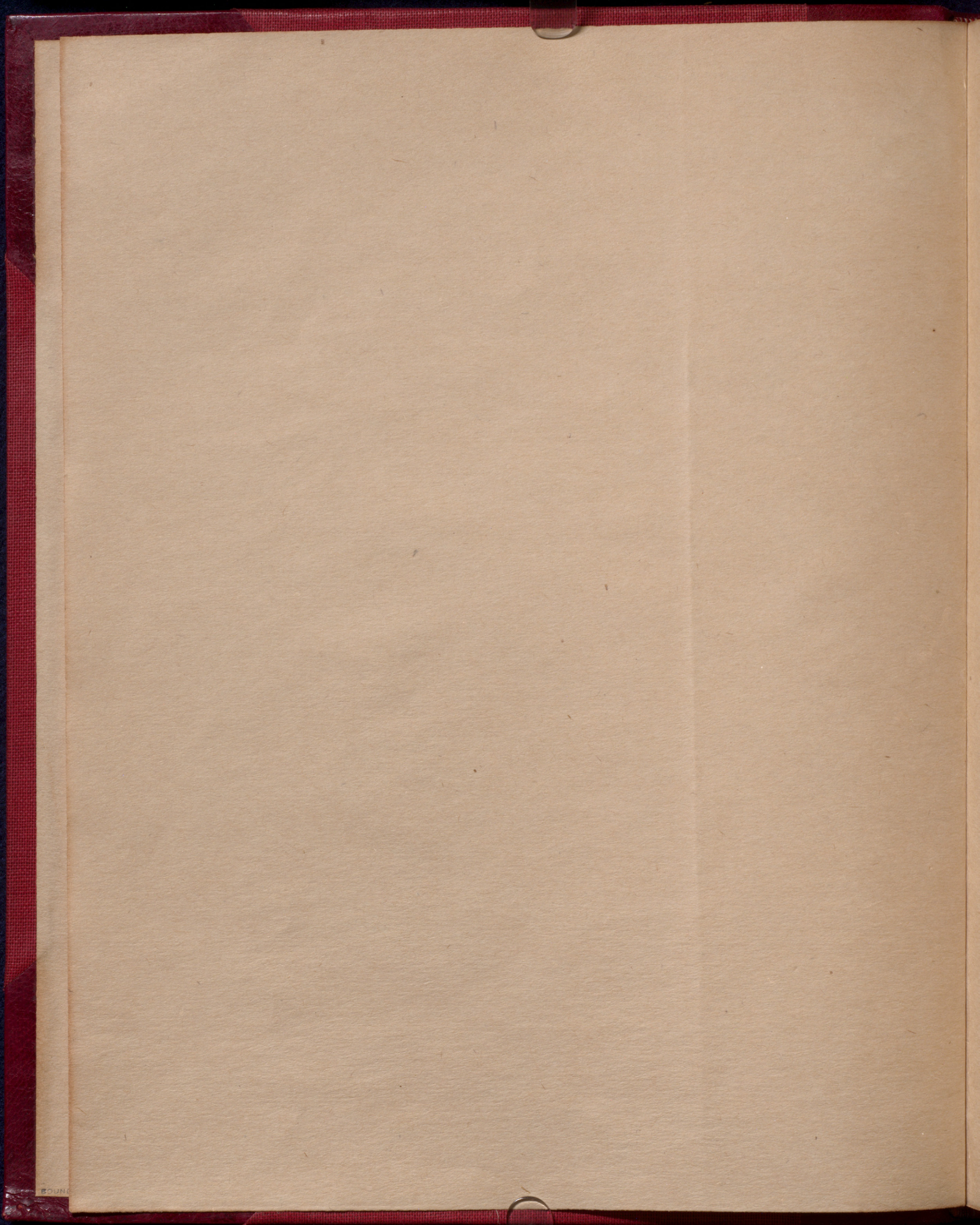
~~Osler 3~~
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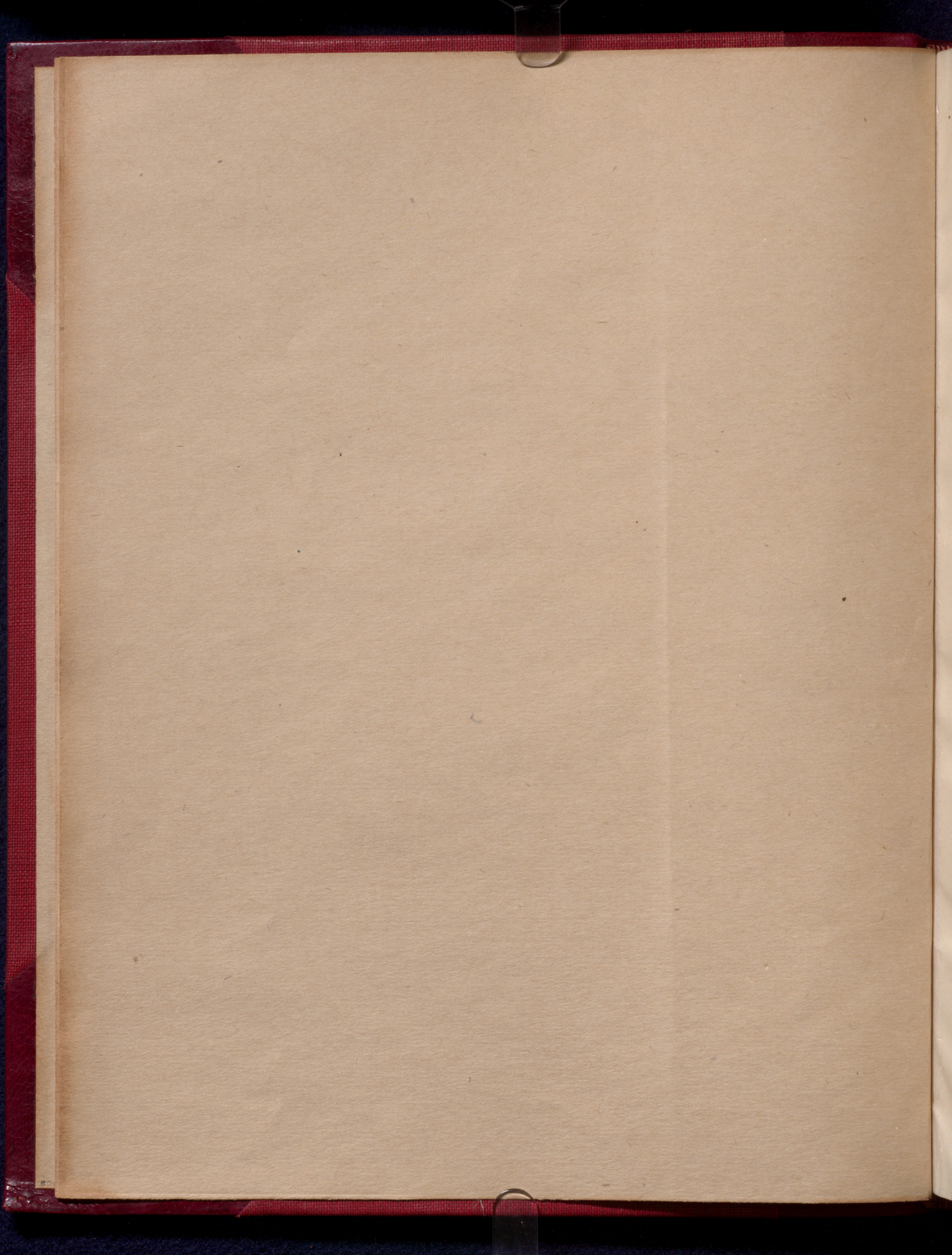
7647. 'The Growth of Truth... Harveian
Oration... 1906.'
MS. of no. 773.

7647

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OXFORD







Material for, and final draft of.

The Growth of Truth --- the Harveian
Oration 1906, Lond¹⁹⁰⁶, H. Frowde, pp. 44. 8°

also pub. in several med. journals.

and the same as

"Harvey and his Discovery" in An Alabama
Student and other Biographical Addresses,
Oxford, 1908, at the Clarendon Press. pp. 334. 8°

Harvard

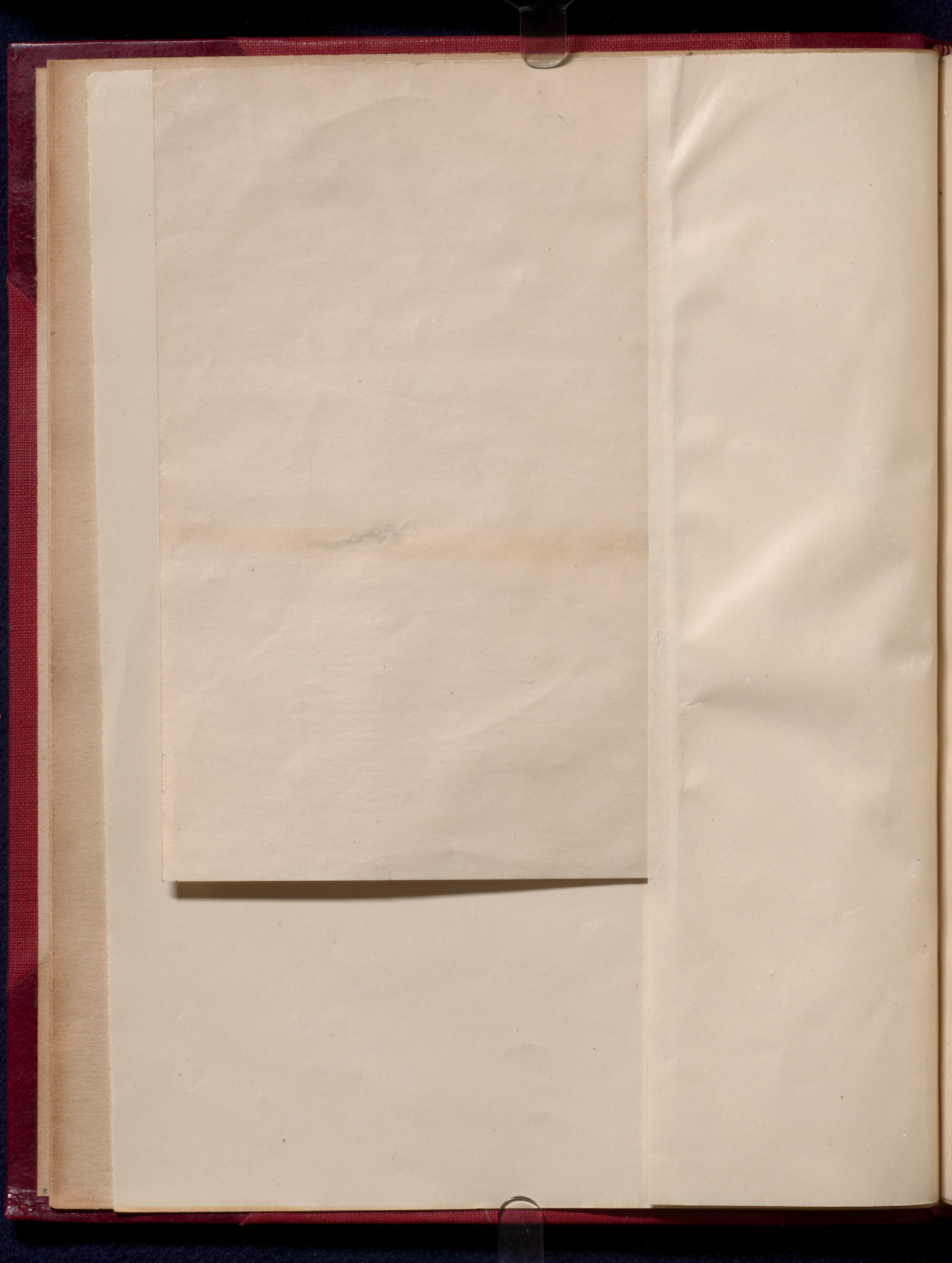
- I The setting - 1600
II The man & his
III The growth of the world
IV The lessons
- Truly
Tues
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inclination to read it thoroughly (over) & to
history & nothing less than the biography of the mind of man
and our interest in it. Its educational value to us is den-
edly, proportionate to the completeness of our study of the individual
through which this mind has been manifested. To under-
stand clearly our position in any science to day we must go back
to its beginnings and trace its gradual development and
following certain laws, difficult to interpret, often obscured by the
brilliantly & achievement, laws which even the most recent
will illustrate this biography, this human struggle
endeavour working through the long ages. The first phase
of scientific truth is conditioned by the state of knowledge at
the time. In the beginning of the 17th century for example
there was no chance of a man having any more possible the
existence (so far as the human mind was concerned) of blood
circulation, capillaries. To have a probability a conviction of a
20th century problem and yet not be able to select from a
analogous causes. Scientific truth alone may be
introduced



over
the
mountain

and particularly in this the case with the history of the ^{progress}
of the race, which we call science.

a somewhat
is nowhere more strikingly illustrated than in the history of the discovery
of the circulation of the blood.

and ^{loosely} ~~loosely~~ all scientific truths have a ^{definite} ~~growth~~ ^{history} which may
be traced ~~history~~, an evolution, the history of which becomes
directly valuable to us as an instrument for further progress.

Can we process - 3 steps -

The nineteenth century.

~~We saw not~~. It is the same as ~~the~~ ^{the} ~~problem~~ ^{problem} of a less important nature & slow stage acquisition has become latent possession, and

* unseemly, but necessary. Duty is upon our needs, and in our minds at
in our bodies. The force of habit becomes irresistible
from our teachers, ~~to and~~ associates, from our
reading, we catch the beliefs of the day & they become
in grammar, part of our nature. For most of this
appears in the half-hazard process we call education but it
soon so long as we retain any mental receptivity. It was never
better expressed than in the famous line that occurred
Helen's dream in his sleep: -

We think so because all other people think so,
 or because - or because - after all we do think so.
 or because we were told so, and think we must think so,
 or because we once thought so, and think we still think so,
 or because having thought so, we think we will think so,
 or because ^{as they} ~~the common~~ ^{common} Walter Bagshot ^{is} tall. ^{over} The ^{same} ^{idea} ^{is} ^{one} of the greatest pains to human nature

The nineteenth century.

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In departing from any settled opinion or belief
the variation the change the break with custom
may come gradually & the way is usually prepared
but the final break is made as a rule by some one in-
dividual, the masterless man of Kipling's splendid
allegory who sees with his own eyes and with a
instinct in genius for truth ~~sees~~ escapes from the
routine in which his fellows live. But he often
pays dearly for his boldness.

Garbo of Bologna, summarized the experience of
Rabelais more than 150 biographies & bibliog-
raphies are given, ~~and~~ more than one half of ~~the~~
~~them~~ had either translated or edited works of the
great physicians. Of our founder, one of the most
distinguished of that group, and of his influence in
reviving the study of Galen and of his influence
indirectly upon Harvey, or Baynes story still
lingers in your memory. Leoniceus, Linacero
Gaulthier, Monti, Koch, Camerarius, Cais
Fuchs, Perbi, Cornarius & many others stamp
only swept away Arabian impurities from the
medicine of the day, but they revived Greek ideals
and more scientific methods of study.

the variation the change the way
may come gradually & the way is usually prepared
but the final break is made as a rule by some one in-
dividual, the masterless man of Kipling's splendid
allegory who sees with his own eyes and with a
instinct in genius for truth sees escapes from the
routine in which his fellows live. And he often
pays dearly for his boldness.

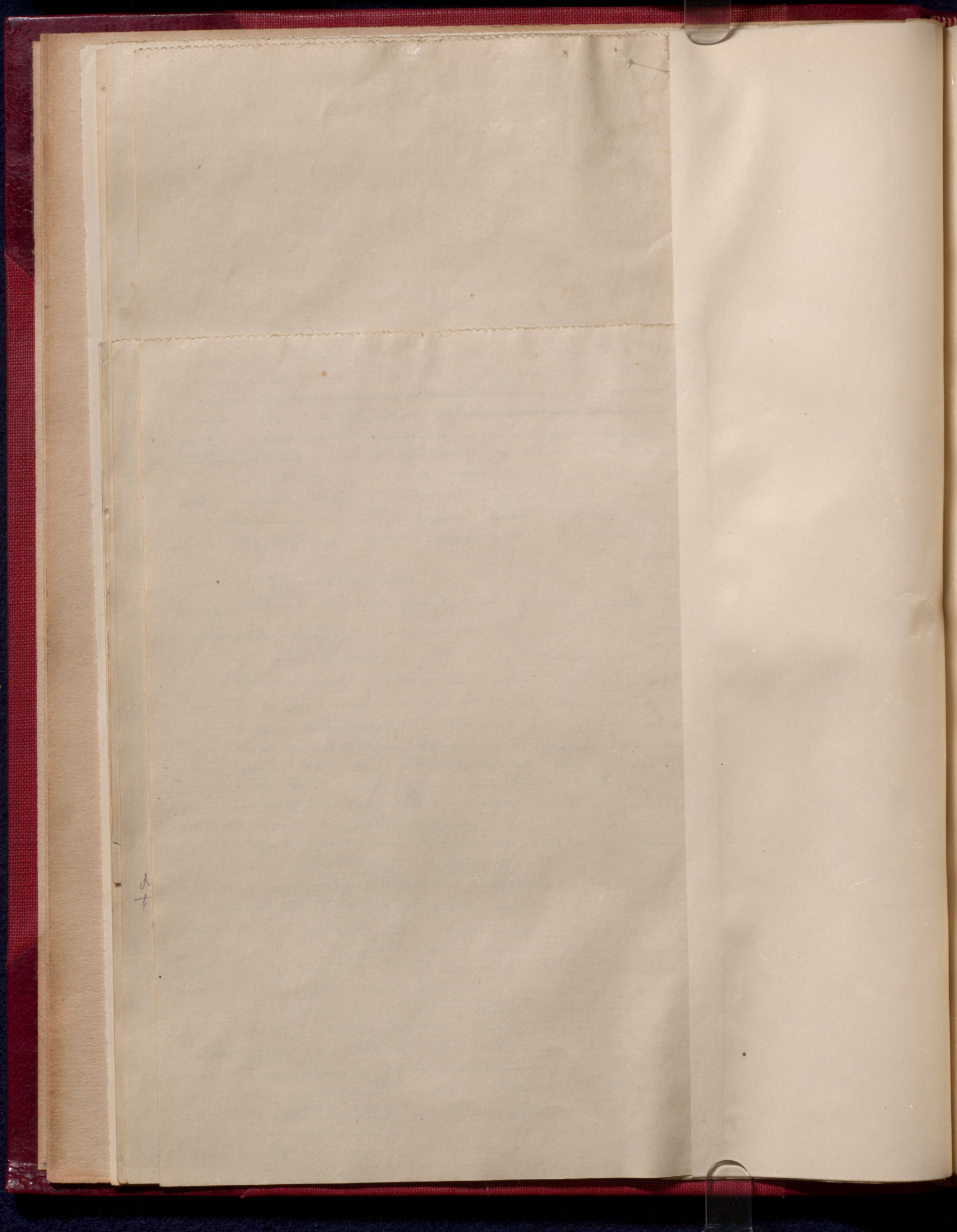
29

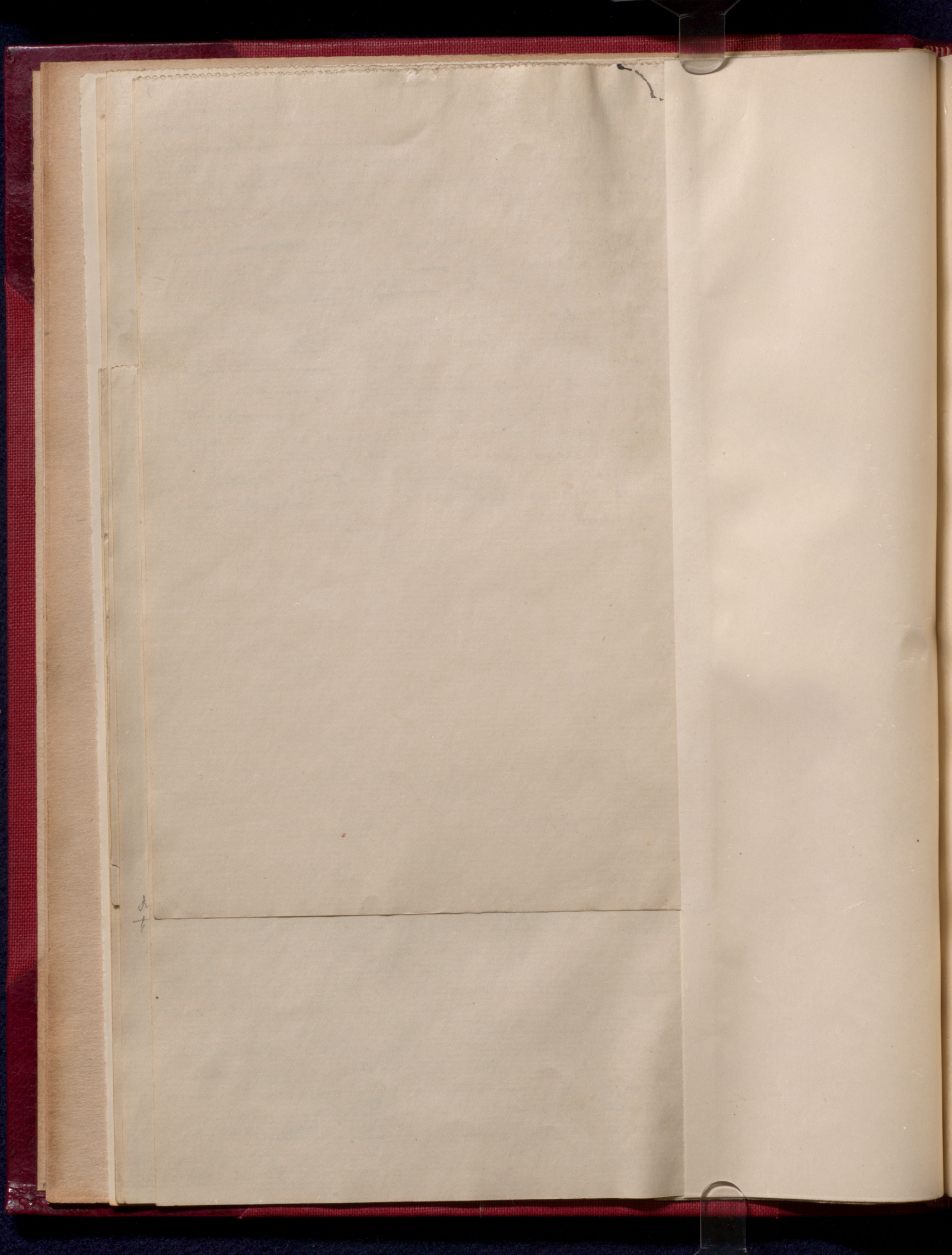
The great practical acquisition of the century was a new anatomy. Vesalius and his followers gave for the first time an accurate account of the structure of the human body and while thus enlarging & correcting the work of Galen contributed to weaken the almost divine authority with which he dominated the schools. Nearly another century had to elapse before chemistry in the hands of Boyle & others reached its ~~scientific~~ ^{modern} period; but the work of Paracelsus, based on that of the pious Spagyrist, Basil Valentine, ~~but~~ ^{by} showing the

The 16th century drawing to a close had been a period of acquisition unequalled in the history of ~~science~~ ^{science}; and the Renaissance had given to Medicine ~~new things~~ ^{new things} - a new spirit, a new authority, a new chemistry. Brooding over the waters of medievalism the spirit had brought forth a new science of the world and of man that had created a new heaven & a new earth ~~and such truths as were~~ ^{and such} truths as were announced by Copernicus and Galileo for trans- cended

"The searching schoolmen's view
And half had staggered that subtle Staggyrite"

~~It~~ ^{among other things it} had given to medicine: ~~three things~~ - a new spirit, a new authority & a new chemistry. In the latter part of the 15th century Hippocrates & Galen came to their own again. A wave of enthusiasm for the fathers swept over the profession, and for at least two generations the best energies of its best minds were devoted to the study of their writings. How numerous and important is that remarkable group of men, the medical humanists of the Renaissance, we may judge by glance at Bayle's "Biographie medicale", in which the lives are arranged in chronological order. From Garbo of Bologna, summed up the attention to Rabelais more than 150 biographies & bibliographies are given, ~~and~~ ^{and} more than one half of ~~them~~ ^{them} had either translated or edited works of the great physicians. Of our founders, one of the most distinguished of that group, and of his influence in reviving the study of Galen and of his influence indirectly upon Harvey, or Baynes story still lingers in your memory. Leonicens, Linacero Gaultier, Monti, Koch, Camerarius, Cais Fuchs, Perbi, Cornarius & ~~many others~~ ^{men of their stamp} swept away Arabian impurities from the medicine of the day, but they revived Greek ideals and more scientific methods of study.





+ (6) 11

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Intellectually harsh as the son of Cain

into this world dropped a young goldmine lad when
on the he matriculated at ~~some other town~~ Cambridge

It may well be that they would have accepted anything
the first judgment of the unimpeachable Fuller
who say

and had regarded the judgment as well as the ~~work~~ ^{that}
~~and were content to~~ ^{and were content to}
~~as being later by Fuller who would leave the best of his~~
back to God's sole judgment and the light of his own work
to men's imitation - with which words half a century
later the inimitable Fuller concluded as short sketch
his life.

appetite ~~more to~~ touch his spirit more ^{colleg} ^{near}
than a fine edition of his principal ^{work} ^{the} ^{most} ^{valuable} ^{of} ^{the} ^{five}
their preparation of which there are those among
us well fitted not less by the reverence for his memory
than by that critical scholarship which he valued
so highly

+ 161 11

When Harvey set out in the Grand tour Italy was still
 the Mater gloriosa studiorum, to which we hundred
 years earlier, so tradition says, ^{in legend} ~~Democritus~~ had erected
 an altar ^{to the} of the Renaissance. The glamour
 of the ~~ancient~~ ^{ancient} ideals had faded somewhat since the days
 when John Free an Oxford man had made the
 ancient leaving his own and had as far bettered
 the instruction of his masters that he was welcomed
 as a teacher in Padua, Ferrara & Florence. In a measure
 for the glory had departed, declined and the strife
 and warfare which had cost the old republics their
 independence. Many years earlier ^{one of our great medical poets} ~~Tracastorius~~ had
 sung - - - (but the effect) ^{over}

and matters had not improved but had rather grown
 worse. Italian influences had sunk deeply into the
 social & professional life of England in the 16th cen-
 tury, more deeply indeed than we appreciate ^{as over} ~~it~~
 now. But ^{the} a generation or two later ~~the~~ the candle
 sticks were removed from the cis-alpine world
 to Montpellier, Paris and Leyden, and in 1593 ~~the~~
 was as natural ^{a well to do} young Englishmen, who wished
 to study medicine thoroughly went naturally to
 northern Italy, and most notably to Padua. Fair
 Padua - nursery of the Arts ^{the churches of former} ~~where ancient~~
 with us may be gathered from the fact that ^{of the University} ~~the~~
 to Oxford & Cambridge it ^{has} more graduates ^{than any other} ~~than any other~~
 than any other ~~university~~. In the years which had
 passed since Vesalius had retired in disgust the
 fame of its anatomical school had been well-
 maintained by Fallopius, Columbus & Fabricius
 worthy successors of the great Master. Of ^{each} ~~each~~ may
 be said what Douglas says of ^{the first named} ~~the first named~~ - in
 docendo maxime meliorior, in medendo felicis
 vivis, in secando & pertusum. While the story
 of his student life can never be told as we should
 like, we know enough to enable us to understand
 the influences which moulded his career. In Feb-

(1) See Italian Renaissance in England, Crispin,
 Macmillan & Co 1902

and Paul Tarpé, but an able hand
 this time dealt with the greatest subject and
 has left us a monograph which for completeness &
 for accuracy & beauty of the illustrations has
 scarcely its equal in anatomical literature. Compare
 plate vii for example with the illustrations of the
~~the~~ ^{the} Bidloo - Couper anatomy
 published nearly one hundred years latter and we
 can appreciate the advantages which Harvey
 must have enjoyed in working with such a master.
 Indeed it is not too far fetched to imagine Harvey
 at scalpel in hand making some of the ^{very} ~~dissection~~
 from which these wonderful drawings were taken.
 But here comes in the mystery -

for

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To what state, O wretched Italy
Has civil strife reduced and mounded thee!
Where now are all thy ancient glories hurled?
Where is thy boasted Empire of the world?
What work in thee from barbarous Rages freed
And has not seen thy captive children bleed?

— and in literary, court and commercial life

1. Syphilis, Englished } in Tate 1686
and the Latin here.

to these proportions, which have
as well filled out as by the veneration for his man
than by that critical scholarship which he values
so highly

To what estate, O wretched Italy
Has civil strife reduced and mounded Thee!
Where now are all thy ancient Glories hurled?
Where is thy boasted Empire of the World?
What work in Thee from barbarous Rages freed,
What work in Thee from barbarous Rages freed?

How the man who wrote such work upon anatomy
was based and whose figures are so beautifully
drawn have a leather patch wide learning and
such reverence for observation that he could not
be so blinded as to overlook the truth which was
tumbling out in the open at his feet - many seemed
to us incomprehensible that his eyes were
sealed, and to him, as to his greater predecessors
in the chapel, clear vision was denied. The
ingenious explanation which he gave of the use of the
valves to serve as dams or checks to the flow
of blood so that it would not irrigate too
rapidly & overflow the peripheral vessels. This
may have been the very suggestion to this pupil
of the more excellent way. The dead hand of the
great Pergamite lay heavy on all thought,
Socrates and Descartes had not yet changed the beginning
of all philosophy from wonder to Doubt. Not
without a feeling of pity do we read of the
hopeless submission to authority, but it not for
us in these light days to gauge the depth of the
veneration with which the men of the 16th & 17th centuries
viewed regarded the fathers. Their mental attitude was that of
in Romances well known men. These divine men of old have
Have reached, then, as yet well, each at one point
The inside verge that rounds our faculty,
And where they reached who can do more than reach?
willing to correct observations and to extend anatomy
discovered anatomical knowledge it was for much to
get at a new interpretation of the old facts on
the new knowledge of the new method is which they could be
correctly interpreted. The new method is which they could be
preliminary to the interpretation of the old facts on
whom, slipping the interpretation of the old facts on
we may go again as did Vesalius at the end of 1616.

(not copy this)
Fabreus

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to the deprivation of the upper parts of the lungs (2)

Perhaps it may have been while listening
to this vigorous & plain statement of his master
that he was struck in a moment of abstraction
dimly dreaming perhaps of his English home so
far away & so long forgotten, that there came
to him the heaven sent movement, the
sudden inspiration, the little doubt - in
his so long in sleep - which ultimately became
the great truth of 1816 - stop here!

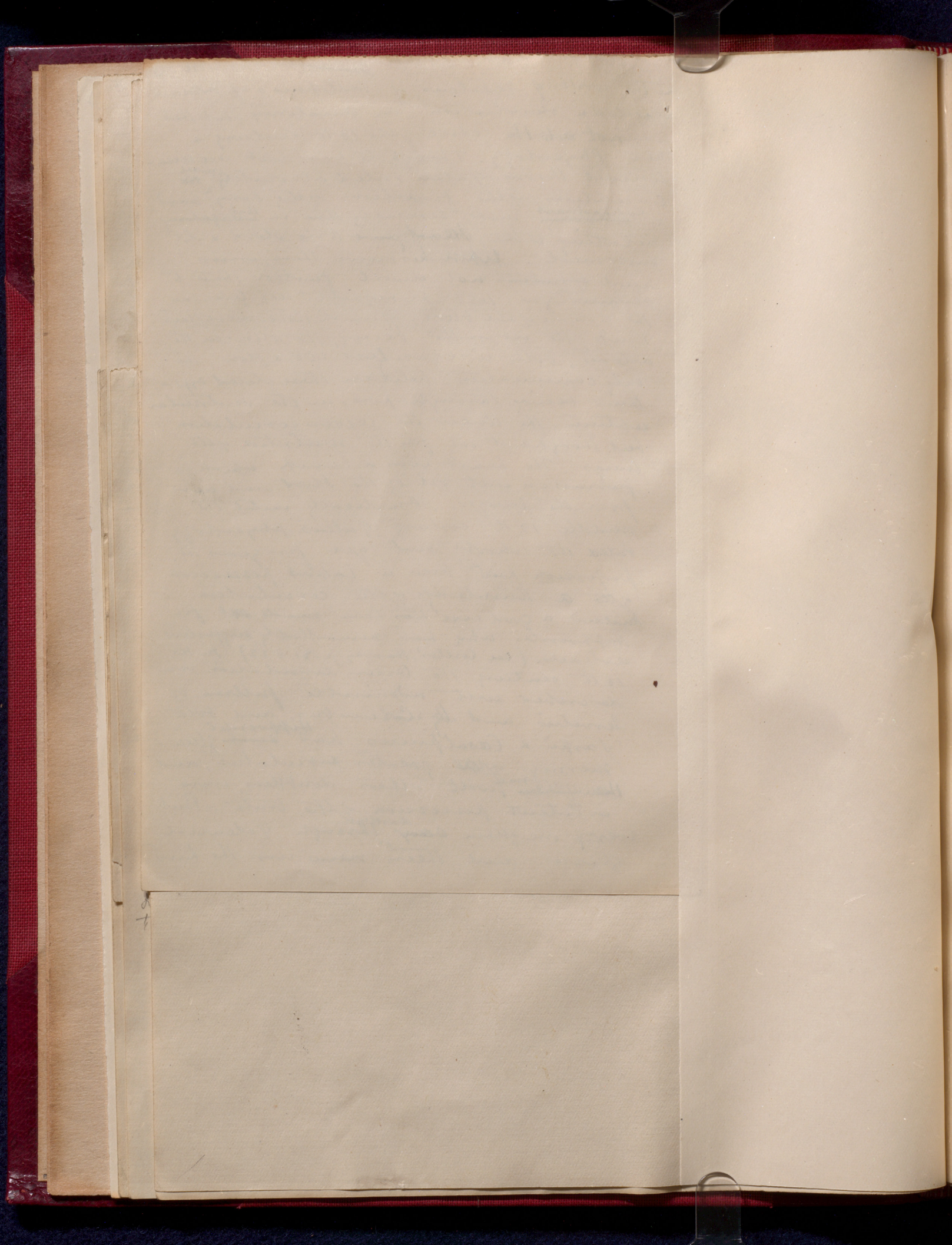
(1) Ea ratione, uti opinor, a natura generatae
ut sanguinem quadammodo removeatur, ne
conseruiant

to the deprivation of the upper parts of the trunk R)

15

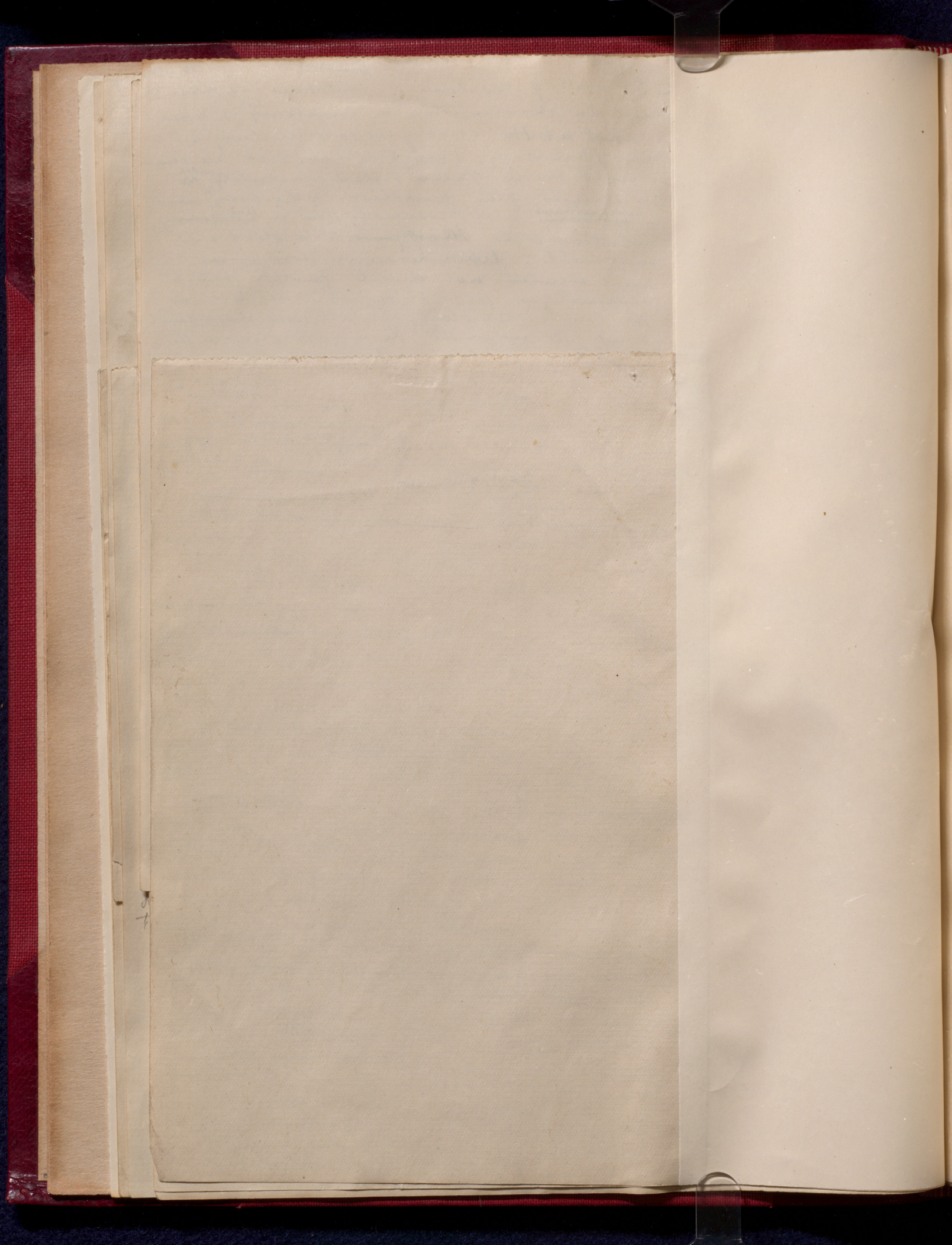
In the words of Vesalius, of Fallopius & of Fabricius, effected a revolution in anatomy, but there was not ~~at the~~ ^{in the} close of the 16th century a new Physiology. Though he had lost an ancient throne Galen ruled absolutely ^{well} ~~the~~ ^{his} conceptions of the functions of the body, and ^{in no department} ~~in~~ more severely than in ~~that~~ ^{that} relating to the ~~Heart~~ ^{Heart} and to the blood & its movement. ~~Upon his views there is no~~
I need ~~to~~ ^{not} dwell further than to remind you that he regarded the liver as the source of the blood, of which there were two kinds, the one in the veins, the other in the arteries, both in ceaseless ebb & flow, the only communication between these closed systems being through pores in the ventricular septum. He knew the lesser circulation but thought it only for the nutrition of the lungs. The heart was a lamp which is furnished with oil by the blood and air from the lungs. Practically until the middle 17th century Galen's physiology ruled the schools and yet for years the profession had been in latent possession of the knowledge of the circulation. Indeed a good case has been made ~~out~~ ^{for} Hippocrates who has remarkably suggestive sentences. (see Willis' Harvey p. 21 & 22) In the 16th century the lesser circulation was described with admirable fullness by Servetus and by Columbus, and both Sarpi & Casalpini had ^{Hippocratic} ~~such~~ ^{glorious} glimpses of the greater circulation, and ~~these of them~~ ^{with others} doubters, were in latent possession of the truth. But every one of them ~~was~~ ^{darkly} through Galenic glasses and their view was the hard

years (anni mirabiles) stand out in bold relief as connected with memorable discoveries or ~~revolutionary~~ ^{revolutionary} the publication of works ^{which have revolutionized the thought of the} profession. But only a few in each century. Even in the 18th so rich in discoveries, has not more than four or five ^{and} years - while 1542, I say, not one of these is connected with work done in this century. In the 17th century it is hard to name four years made memorable by the announcement of great discoveries or the publication of immortal works, in the 18th century not three, while in the century just

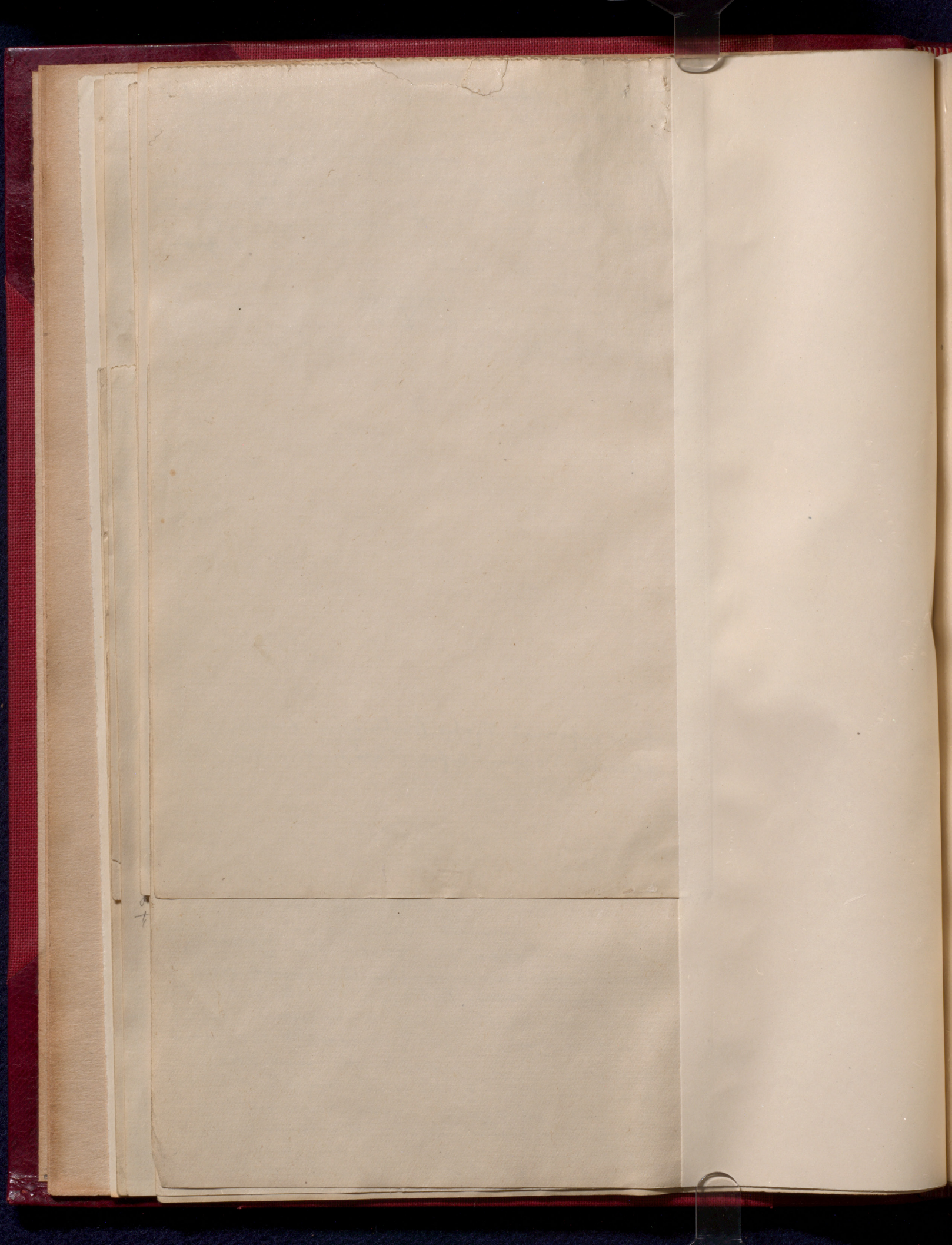


6 17.

Harvey - $\frac{a}{16}$



which is in the Hunstorian Collection Glasgow, & a photo-
graph of which a Payne has recently put in our
Library ~~we can bring to mind~~ ^{we can bring to mind} ~~to recollect~~ ^{to recollect} a fact with our
mind's eye to see this memorable occasion. The
anatomy, one of the six annually handed over to
the college, on the table, the prosecutor standing by
the skeleton near by, hand and very probably on
the wall the Tabula ~~Tabulae~~ ^{of dissection of the arteries, veins, and}
above us today nerves that hang above is today
but the centre of attention was the lecturer, &
a hands-on guide - a cadaver.



little small dark man, with ^{black} ~~dark~~ piercing eyes, 3
 and a quick vivacious manner, already a fellow
 nine years standing ~~there was still the salt~~
~~fresh about him~~ and an ease & grace in
 demonstrating that bespoke the mastery of
 subject studied for twenty years with devotion
 that we can speak of the Hunterian. ~~Already~~ A
 fellow of nine years standing there was still the
 salt of youth about William Harvey when not
 without some trepidation we may suppose, he
 faced his auditors on the second day - a not
 unentitled audience ~~and~~ containing many

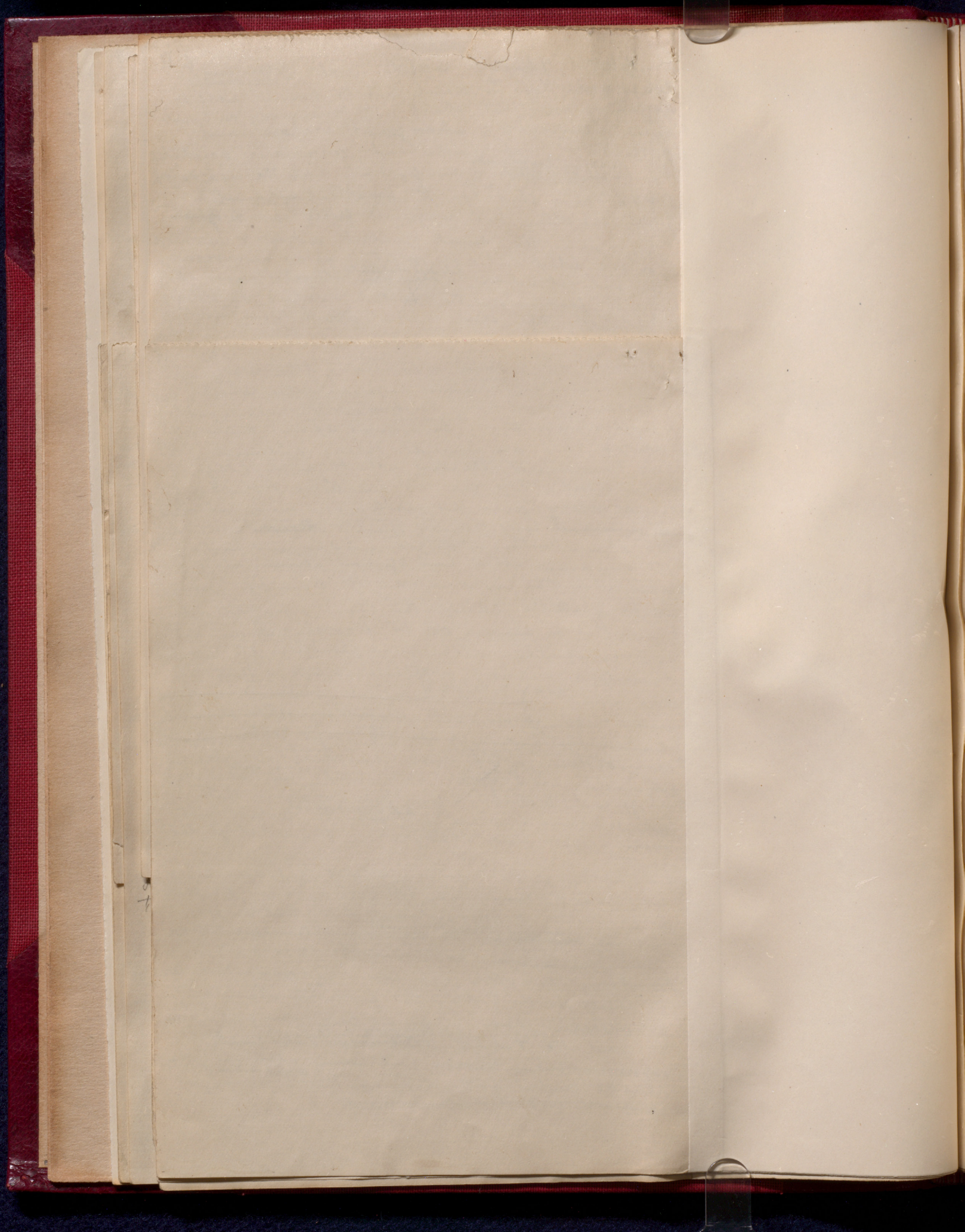
There is one des mirabilis in the history of this college, in the
 history indeed of the medical profession of this country, and
 the circumstances which have made it memorable
 are well known to us. ^{on 19 October} On a bright spring morning
 April 17th 1616 an unusual throng gathered in the
 New Anatomical Theatre of the Physicians College at
 Auen Street. The second Lincian Lecture of the
 annual course, given thus far by a new man had attracted
 an unusually large gathering (partly attracted by the brilliancy
 of the demonstration on the previous day, and partly by
 the rumours which had spread abroad about the
 strange views to be propounded by the lecturer. I do not
 know of all the college the same stringent rule
 prevailed as ~~prevailing~~ at the Barber-Surgeons Hall
 as to compulsory attendance. Doubtless not but the
 President & several of the Fellows would be there in
 due array ^{and with the help of} ~~an unentitled audience made up~~
~~of men well versed in the knowledge of the day~~ ^{many}
~~who had heard & seen all the great teachers of Europe~~
 Henry Atkins ^{the President} whose name ^{stands} on ^{my} roll the
 ingenious ^{of the} ~~into~~ ^{had} ~~had~~ ^{share}
 of official lectures, less ^{burdensome} three
 hundred years ago than now ^{but} ~~the~~ ^{lecture} of the
 previous day had whetted his somewhat jaded

^{appetite} the picture of the anatomy lecture by Baumeister
 which is in the Hunterian collection Glasgow, & a photo-
 graph which Dr Payne has recently put in our
 library ^{we can bring to mind} ~~reconstruct a picture with our~~
^{mind's eye to see} this memorable occasion. The
 'anatomy' one of the six annually handed over to
 the college, in the table, the prosector standing by
 the skeleton ^{very} ~~near~~ ^{of the} ~~very~~ ^{dissecting} ~~on~~ ^{the} ~~the~~ ^{table}
 the wall the Tabula ^{of the} ~~of the~~ ^{anatomy} ~~papers~~ ^{and}
 above as today nerves that hang above us today
 But the centre of attraction was the lecturer, &
 & all a hands full of a ~~auditorium~~

for

ce

ots



(2) 19

a little small dark man, with ^{black} piercing eyes,
and a quick vivacious manner, already a fellow
of nine years standing ~~there was still the salt~~
fresh about him. And an ease & grace in
demonstrating that bespoke the mastery of
subject studied for twenty years with devotion
that we can speak for Hunterian. ~~Already~~ A
fellow of ^{only} nine years standing there was still the
salt of youth about William Harvey when not
without some trepidation we may suppose, he
faced his auditors on the second day - a not
uncritical audience ~~and~~ containing many
men well versed in the knowledge of the day and
many who had heard all the best lectures of Europe.
Mayerne would be there, not yet a fellow but happy
in his escape from the Paris faculty, but with the dust
of conflict still upon him. He would scent the
battle afar in the revolutionary statements of which
he heard. Neverell fresh from incorporation
at Cambridge, also not yet a fellow, Monro defunct
or bonus - often President, whose little book,
~~not~~ ^{sets forth his life}, Paddy, a
noteworthy benefactor, a keen student still
of Mitchell, remembered at his old college of Jesus at
Oxford. Baldwin ^{was} ~~the~~ ^{elder}, also a bene-
factor and perhaps his son, then preparing to
enter Leyden whose memory should be ever given among
us. Malheur Guine would have certainly strided
in with this friend Paddy. As an old Paduan &
fresh from the lecture halls of John Craig would
not be absent, nor would Bryan anxious to hear.
Thudde, ^{the} ~~the~~ ^{president} ~~was~~ ^{was} present attracted perhaps
by rumors of anti-galenical doctrines, which had
served to keep him out of the college - nor would he be likely
to be absent in the festival of one whom he calls his
"physicall & theosophicall patron".

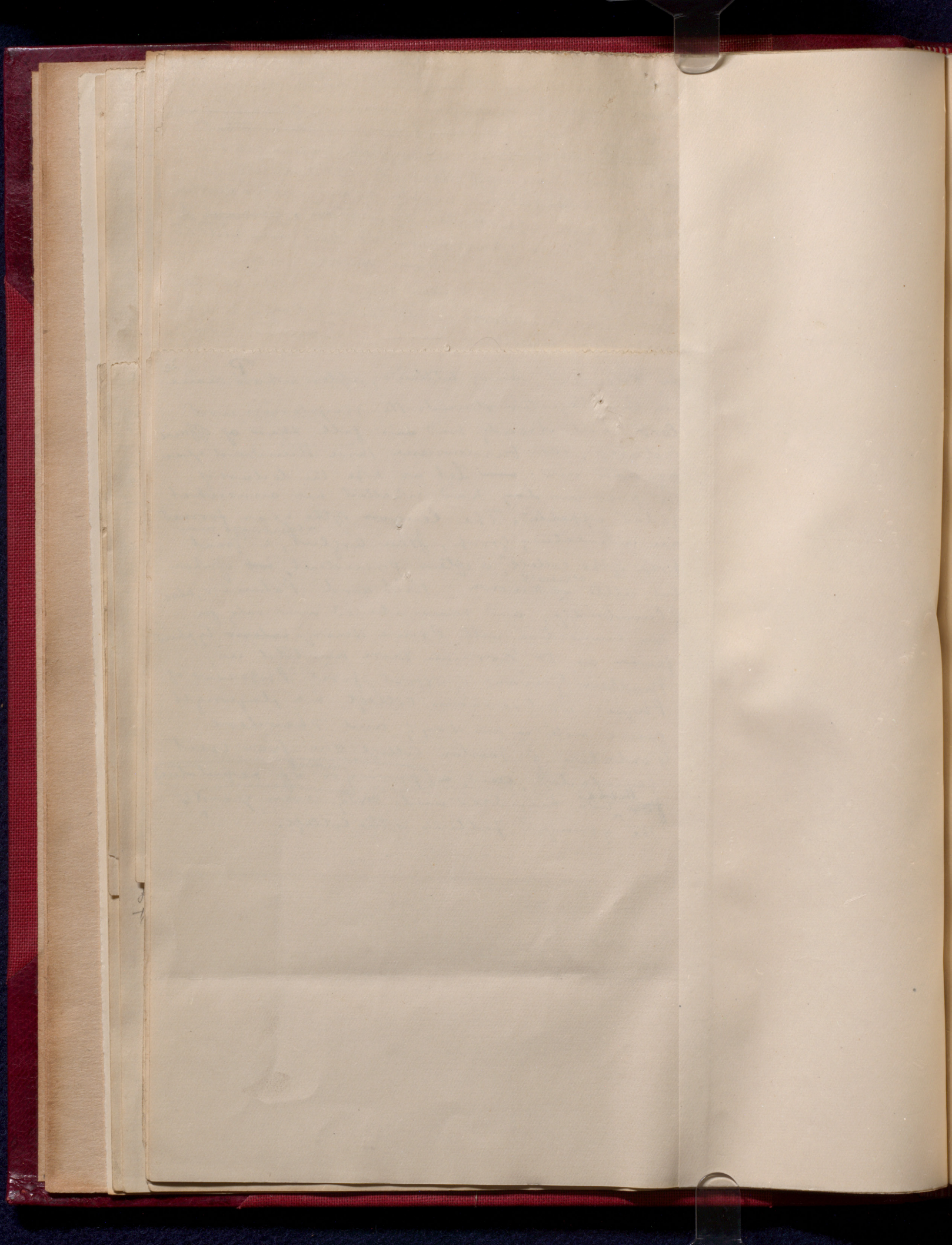
Leave 10 lines

+ See about Forlesene, William, & sister. For, Mansell who
are said to have been present when the first bridge of
Padua

$\Sigma 21$

P. 20

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~~2~~ 2.

by

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1. Learn

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equalled the attraction of the play.

Harvey describes well the grapher

equalled the attraction of the play.

Authors are quoted, ancient & modern, Aristotle &
 Galen leading the list. In the second edition, which is
 not nearly so extended in the notes. Twenty one authors
 are referred to, Galen leading the list, then Aristotle
 & next Columbus Vesalius, Fabricius, Cestachius
 and Casalpium are all mentioned. If in the first
 edition more were intended to be added with Galen
 and Cestachius it was from no poverty of the author
 and there was no lack of public acknowledgment
 of his indebtedness to his predecessors

Have since the origin of a new

For when we have + found in the de pueris in their
 but we do know the interesting story from our
 of 1650 in which it came from the pen of the
 because of the de pueris
 F. H. Kelly for doing so we know it has
 showing that our President of 1852 secured
 the present library of the city of London
 when we are indebted for the de pueris
 name but

25

Butless to ask, impossible to answer is the question why Harvey delayed for so long the publication of his views. He seems to have belonged to that interesting type of man not uncommon in every age who knows too much to write. It is not a little remarkable that this notice of learning has been a feature in some of the greatest of discoverers. Perhaps it was the motive of Copernicus who so dreaded the prejudices of mankind that for thirty years he is said to have detained in his closet the Treatise of Revolutions. ~~But~~ ^{Over} ~~perhaps the~~ ^{most} ~~organism~~ ^{must} ~~before publication~~. Two of the famous discoveries of Englishmen have the same curious history, two which perhaps alone can be said to be greater than the demonstration of the circulation of the blood. Zachariah Wood speaks of Harvey as the survivor of the little world to speak of him from another Englishman who first ~~met him~~ ^{met him} ~~in 1628~~ ^{in 1628} ~~than both~~ ^{than both}.

24

It is a great pity that we have no contemporary account of the impression made by the new doctrines. We have the authors statement that they were taught annually and elaborated and the Vass notes of 16 show leave 2 lines

But so far as I know there is no contemporary reference to show that his teaching had any influence or had got beyond the circle of the college. Harvey we are not without a full hand account of the authors reception. "Some" ~~times~~ 3 lines

It is difficult for us to ^{realize} ~~put ourselves in the~~ ^{the} ~~position~~ ^{position} of the men who listened year by year as the turn of the "Parlor lecture" came. Their opinions were no less firmly held than is our positive knowledge. "The Great Dictator Hippocrates put us in mind of it, Galen has a thousand times recalcitrated the same, the prince of the Arabian tribe, Avicenna, has set his seat unto it - what more could we ask?" This ^{expresses} ~~shows~~ their mental state, and such a heresy as a general circulation could scarcely be appreciated, and would be condoned in a man of such good parts just as we overlook the intellectual vagaries of our friends

ay,

for

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2. 25
 Bootless to ask, impossible to answer is the question
 why Harvey delayed for so long the publication of his
 views. He seems to have belonged to that interesting type
 of man not uncommon in every age who knows too much
 to write. It is not a little remarkable that this reticence
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of Revolutions. But ~~perhaps~~ ^{over} ~~the~~ ^{most} ~~organism~~ ^{organism} ~~to~~ ^{to} ~~appear~~ ^{appear}
~~before publication~~. Two of the famous discoveries of
 Englishmen have the same curious history, two which
 perhaps alone can be said to be greater than the demon-
 stration of the circulation of the blood. Zachariah Wood
 speaks of Harvey as the survivor of the little world to
 distinguish him from another Englishman who first
 went about the greater world "but a greater than both"
 Isaac Newton had grasped the secret ^{of a cosmic} ~~of a cosmic~~ ^{and} ~~and~~ ^{and}
 circulation and brooded in silence over the motion of
 the spheres for more than twenty years before publishing
 the Principia. Between the writing of the rough sketch
 of 1642 and the appearance of the Origin of Species, seven-
 teen years elapsed, and from the date of the rough
 journal notes, 1836 in which we have the first men-
 tion of the theory, more than twenty years. ~~the~~ ^{the} ~~own~~
 statement is as follows

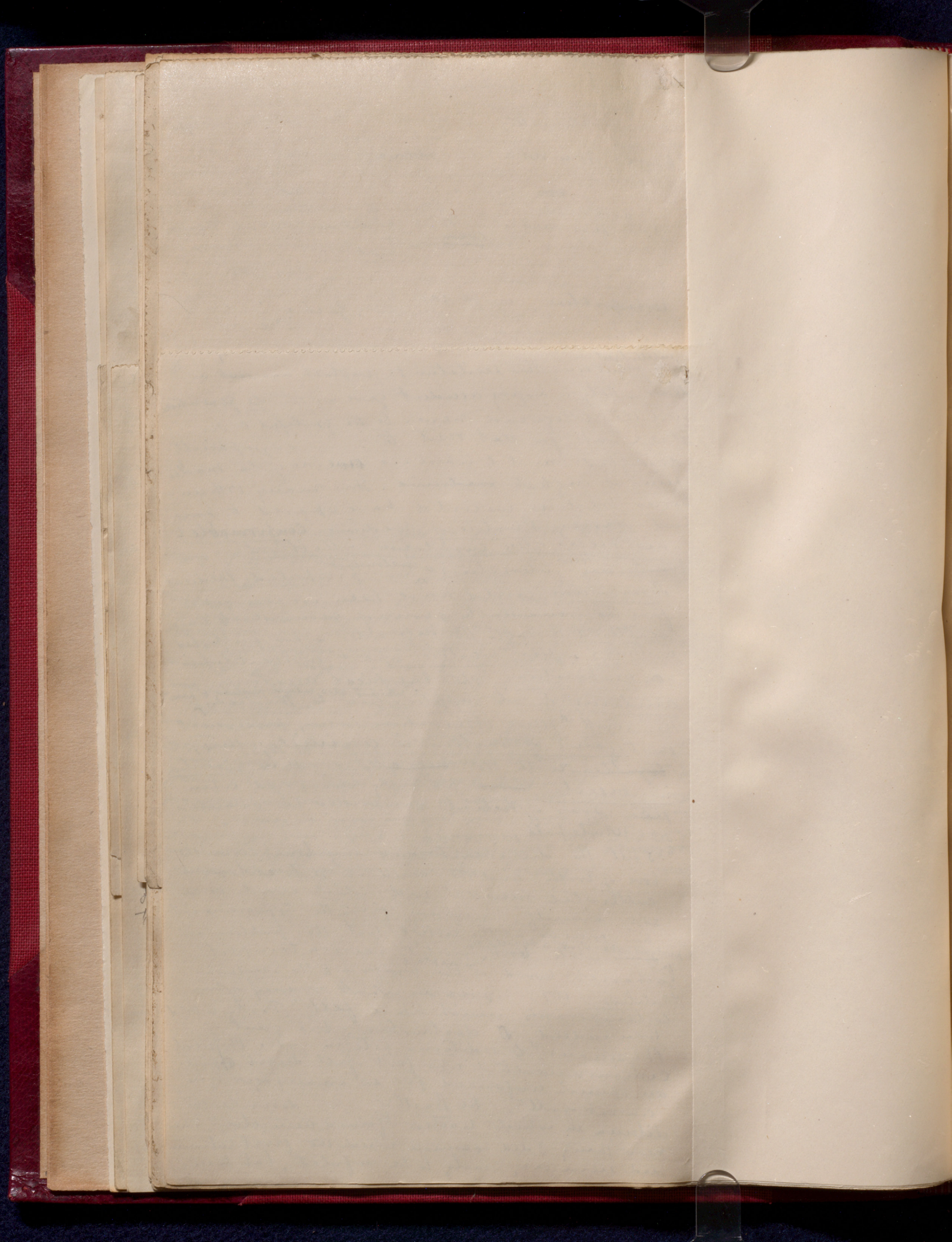
cultivated minds with which words he con-
siders himself, deriving from the experience with
his friends at the college that the publication
of ^{any of his works} ~~any of his works~~ ^{by calling the} ~~any of his works~~ would raise a tempest.
Zachariah Wood in the preface to the English
Edition 1673 expresses what many of his
contemporaries must have felt. "Truly a bold
man indeed, O disturber of the quiet of
Physicians! O seditious citizen of the Physical
Commonwealth! who first full church oppose
an opinion unformed for so many ages by the
ancient fall". De Baillif describes the
dilemma in which teachers found themselves. "This
new thing I did examine which the first substance
did seem very easily to be refuted, but being

from which they say "very much the same reason
 returned the author. The same reason is
 culture with the authority of 2000 and 3000 years
 but that it was "not given in their address", but
 the general conclusion "is to move and understand
 of these men that I and only bear witness to myself
 from the very year but I breathe but I have
 understood it long for my knowledge so much that
 word and action, that has become so another nation
 and doctrine are given and it has still done
 and - and noted from authority, sufficient all men
 (that will). He felt - as he says to Bacon 117. It was
 almost certain to call in question doctrine that has
 descent through a long succession of ages and carry the au-
 thority the ancient. It is expected with nature 117
 to accept the authority and was of still higher authority.
 Bacon kept the human organism by him for
 twelve years and then by year touched it, under
 Rowley state that he saw 12 copies!

weighed in a just balance and having added
reason my own eye - sight - it was found in-
expugnable, nay (the very prick of truth ^{inforcing} ~~confronting~~)
to be embraced with both arms. What should
I do? Must Hippocrates be left, Galen slighted?
No, if we follow the truth - ~~seized~~ ^{seized} with reason and
our sense we are still Hippocrates his we
are still Galen" (English Edition 1653)

^{intelligent} This reluctance, this hesitation to publish has cost us
dear. Only a happy accident gave us the de Generatione
and the College can never be too grateful to Sir
George Ent for that visit to ^{so graphically}
described and to which we owe one of the master-
pieces of English medicine. How many 17th cen-
tury treatises we could have spared to have
had Harvey, Practice of Medicine Conformable to
his Thesis of the circulation of the blood
~~What an~~ ^{How} interesting & ^{constructive} his prospected Medical
Observations could have been we can gather
from the remarkable series of remarkable cases
scattered through the MS notes & his published
writings. His "lecture apart" in ventilation
or Respiration the Medical anatomy or
anatomy in its application to Medicine ^{which I also intended publishing to press}
the work "from observation in my possession"
on Organs of Motion in animals; there,
~~together with the~~ ^{the} help of the work in Generation
in insects were probably dispersed when
these sons of Belial ransacked his chambers
at Whitehall,

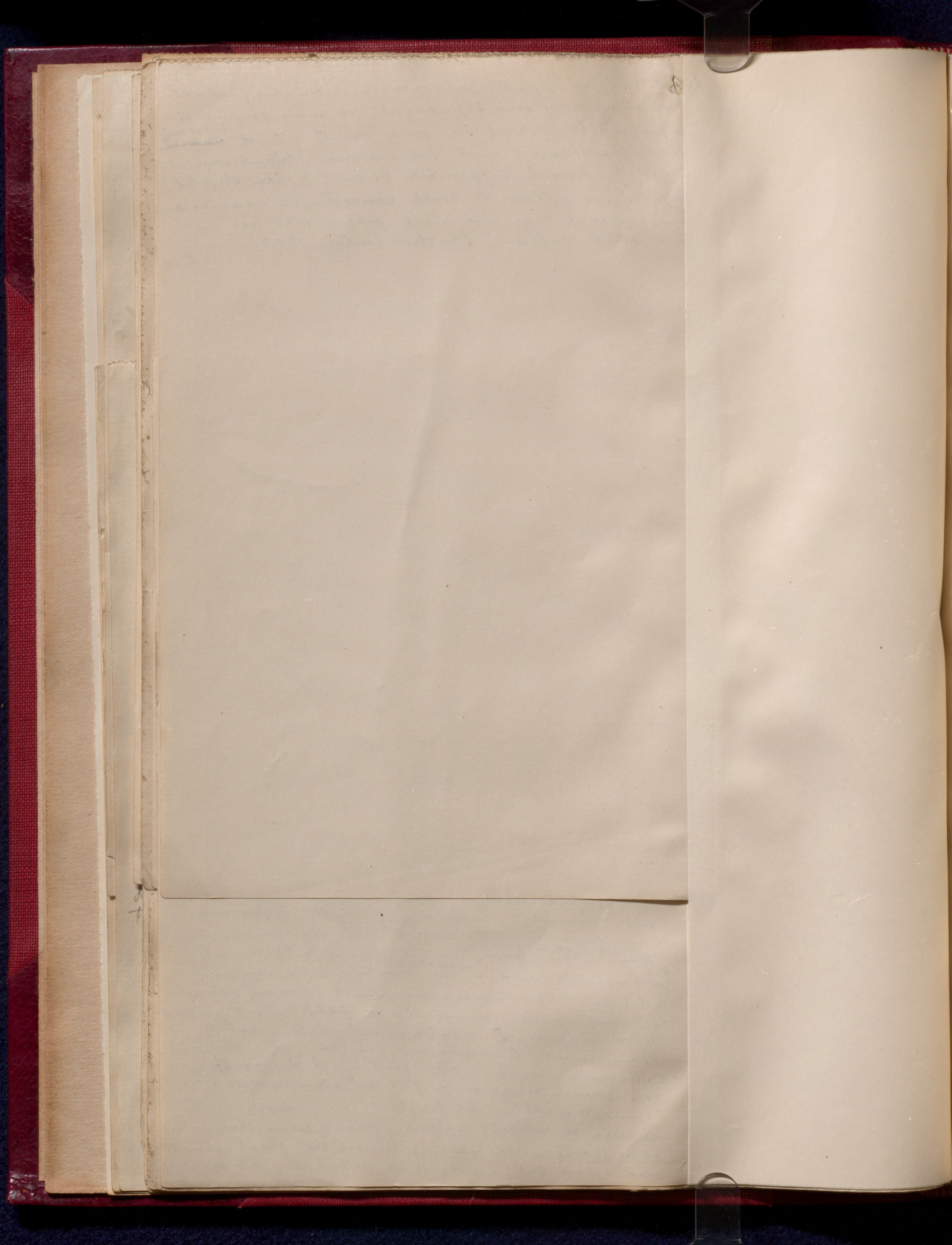
"Still the die is cast and my trust is in the
love of truth and the candour that adheres in
cultivated minds" with which words he con-
soles himself, knowing from the experience with
his friends at the college that the publication
of a ^{portion of this work} ~~little~~ ^{work} would raise a tempest.
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ancient fall". De Baill describes the
dilemma in which teachers found themselves "This
new thing I did examine which the first substance
did seem very easily to be refuted, but being



27

weighed in a just balance and having added
to reason my own eye-sight - it was found in-
spugnable, nay (the very prick of truth ^{inforcing} ~~conforming~~)
to be embraced with both arms. What should
I do? Must Hippocrates be left, Galen slighted?
No, if we follow the truth - ~~seced~~ ^{seced} with reason and
our sense we are still Hippocrates his we
are still Galen" (English Edition 1653)

1634) the Harveian views are ^{now given}
its edition (1616) of 165-8. in which as he says (over)
Highmore ^{the} distinguished Dorsetshire
anatomist ^{in his well known} ~~in his~~ ^{Analogy} published in
1651 gives ^{the ablest} ~~the~~ ^{position} of his master's views
that had appeared in any systematic work of the
period and he urges his readers to study the work
de motu cordis as *fontem ipsum* from which
to get clearer knowledge. He has ^{the} ~~the~~ ^{appropriate}
motto for the period - *audamus veteres: sed*
nostros utimur annis. But even so late as 1671
the old views were maintained in the English Edition
of *Reclan*



and yet the knowledge of Harvey's views must have
spread broadcast not only in the profession but in that
~~distinguished~~ ^{large outside} circle in the land - amongst distinguished
of men who ~~had~~ ^{felt} the new spirit of science
working in their veins. From the ^{of private conversation} Linnæan lectures
which no doubt he often attended Kebleur Digby must
have had much of the information about Harvey's views
in Generation, - at least since 1844, not published
anywhere. While he knows ^{well} ~~to do more~~ the
modern of the blood as afforded by Harvey and has
himself in making the great ~~antedote~~ ^{standard} the
adum of the riper heart, Digby like Sec Carter could not
embrace himself from the old views, and as
the following ~~from~~ ^{from} Mikrokosmographie

Micro Kosmographie

in the preface 'the book of the breast' is altogether
new - an item of no little interest since
he was a man of ^{as he says} and "the Hour glass
has length", and but a few sands remain un-
run

and yet the knowledge of Harvey's views must have spread broadcast not only in the profession but in that distinguished ^{large outside} circle in the land - ^{large} distinguished given who ~~had~~ ^{felt} the new spirit of science working in their veins. From the ^{public} ~~university~~ ^{university} ~~lectures~~ ^{lectures} which no doubt he often attended Kenelm Digby must have had ~~much~~ ^{some} of the information about Harvey's views in generation, at least since 1644, not published anywhere. While he knew ^{well} ~~he~~ ^{he} ~~the~~ ^{the} ~~modern~~ ^{modern} of the blood as expounded by Harvey and had himself in making the great ~~antedote~~ ^{antedote} ~~staidest~~ ^{staidest} the adm of the ~~vipers~~ ^{vipers} head, Digby like Sec Carter could not escape himself from the old views, and as shown in the following passage - p 238. Treatise of Bodley's p 238 + +

The ~~first~~ ^{first} read leave ten lines

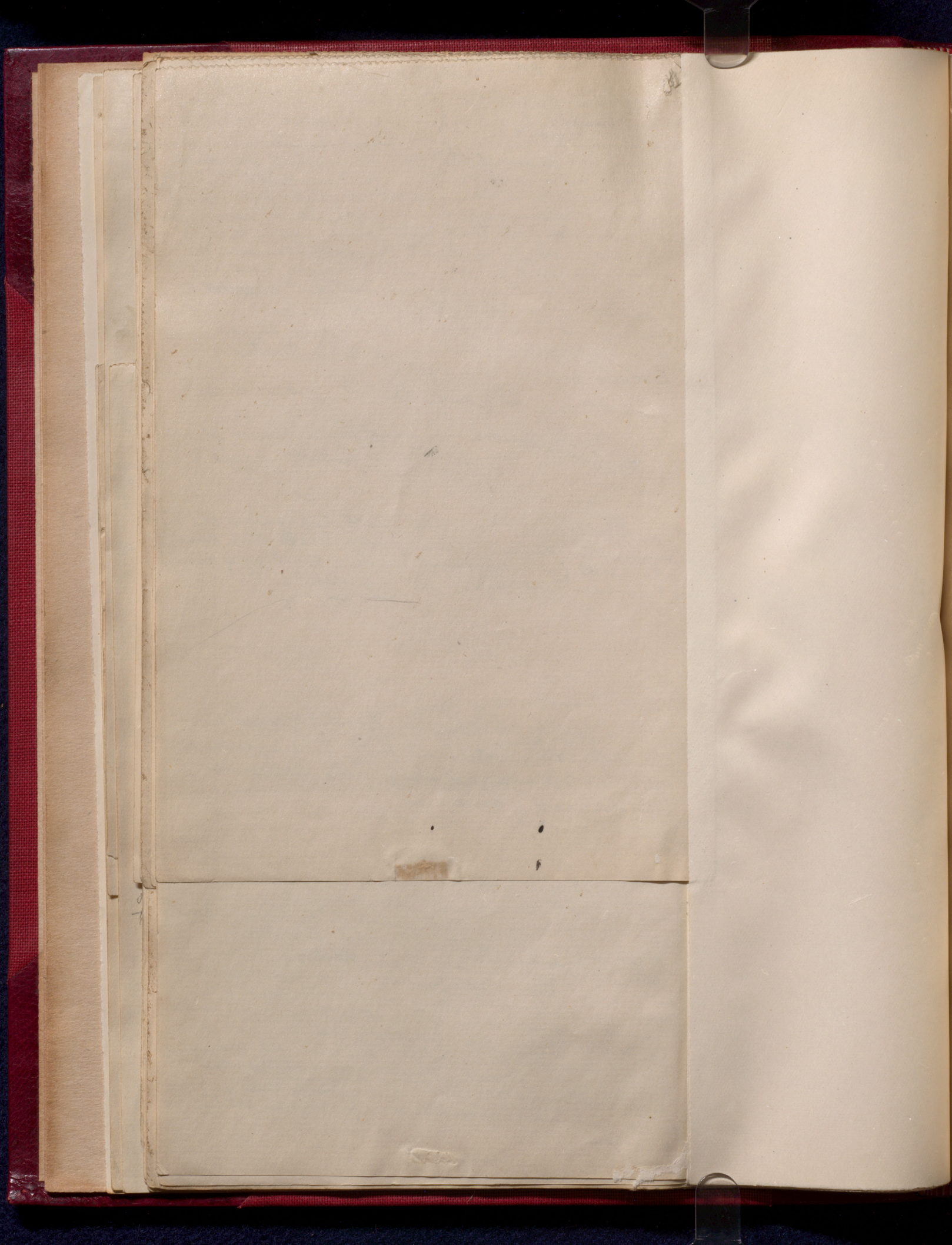
Sir Thomas Browne preferred the discovery of the circulation of the blood to the discovery of America

Temple

Sir William Temple well expresses the ~~new~~ ^{new} ~~of the~~ ^{of the} ~~altitude~~ ^{altitude} of mind of the intellectual Philistine who looks for immediate results. Speaking of Harvey & Copernicus he says - see blue slip

Our old friend Sir Thomas Browne with his love of paradox declared that he preferred the discovery of the circulation of the blood to that of the discovery of America

is derived from old formulation, is disputed; nay it is so too, whether they are true or no; for though reason may seem to favour them more than the contrary opinion, yet sense can hardly allow them, and to satisfy mankind both there must concur. But if they are true, yet there two great discoveries have made no change in the conclusions of astronomy nor in the practice of Physics, and so have been but little use to the world, though perhaps of much honour to the author. X



31
the reception in Holland & Germany of Harvey's
views there is nothing to be added to the admir-
able account given by Willis. The early and stren-
uous advocacy of Des Cartes must have influenced
the Dutch physicians powerfully though with
his usual ~~he could not accept the gelist~~
not in this as in other things the infection of
his early years proved too powerful and he
could not get rid of the ^{ancient} spirits. Of the discovery
of the circulation he says (Census Edition Vol IX
p 159) it is "la plus belle et la plus utile
que l'on pût faire en médecine". "Toute-
a fait contraire au sein touchant
la mouvement du coeur" which he held to

30
Dr W. Temple. Works. 1814 Vol III p 293

T says that for "sense & herget both of sense
& judgment" Hippoc^{rat} ~~As longa, vita brevis~~
is unequal.

Dr W. Temple notes that Dr Harvey
"opinion about the circulation of the blood
which was expected to bring in great
& general revolutions into the whole
practice of physick has had no great
effect". "Not the least to be so well
believed as proved" or too fine
to be capable of it

- The famous Dr H. when he was reading
Vigot sometimes thrown him down
upon the table & say he had a devil.

~~Speaking of Harvey & Copernicus~~ "X" whether
either of them be modern discoveries
or derived from old formulation is
disputed; nay it is so too, whether they
are true or no; for though reason
may seem to favour them more than
the contrary opinion, yet sense can
hardly allow them, and to satisfy
man's mind both there must concur.
But if they are true, yet there were great
discoveries have made no change in the
conclusions of astronomy nor in the
practice of physick, and so have been but
little use to the world though perhaps
of much honour to the authors "X"
p 468

31
Of the reception in Holland & Germany of Harvey's
views there is nothing to be added to the admir-
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uous advocacy of Des Cartes must have influenced
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of the circulation he says (Census Edition Vol IX
p 159 it is "la plus belle et la plus utile
que l'on pût faire en médecine". "Toute-
a fait contraire au sein touchant
la mouvement du cœur" which he held to
be due to an ebullition of the spirits, and
a sort of ferment (espece de levain) existing
in it. ~~The whole question was~~ Much more
actively discussed in Holland than elsewhere
and the writings of Drake, Walaeus, Regius
Plempius, Sylvius, de Haak, Cunnugius
Bartholinus and others thrashed out the whole question
very thoroughly and their views with those of
Hoffman, Olegel & others are referred to
by Willis and given in greater detail by
Riviera (opuscula anatomica London 1649

a costly vineam of Portius against the circulation
of the blood (Vol I. p 224
to him the circulation of the blood was never more
than an ingenious paradox.
Devis Anatomie de l'homme suivant la circulation
et les nouvelles decouvertes 1690

The professors at Padua made the circulation
but that they would not admit any such hypothesis. (Palm 1690)

which is a
discussion of the
the same people of the
order being great in
determine, and on the
of these literature also
known and in the
more freedom. These
of him
begin, ending, & scholasticism
was the pattern

was far from right In the oft quoted statement
for Harvey "conquering Europe" hath established a new
doctrine in his life time. Hobbes was ~~not~~ ^{& Holland} right so
far as England ~~were~~ concerned, but it was far otherwise
in the Continent. Galien's doctrine held forth until
the gradual reception of the circulation in Holland &
Germany & Italy, but it was in certain of the schools
of ~~Bologna~~ ^{Mantua} that it was maintained & bitter
protracted rivalry to the new doctrine.
The medical school of the University of
Paris at the time one of the best organized &
most important in Europe, declined to accept
Harvey's views during his life time and for some
years after his death. The history of the period is
lours in that direction.

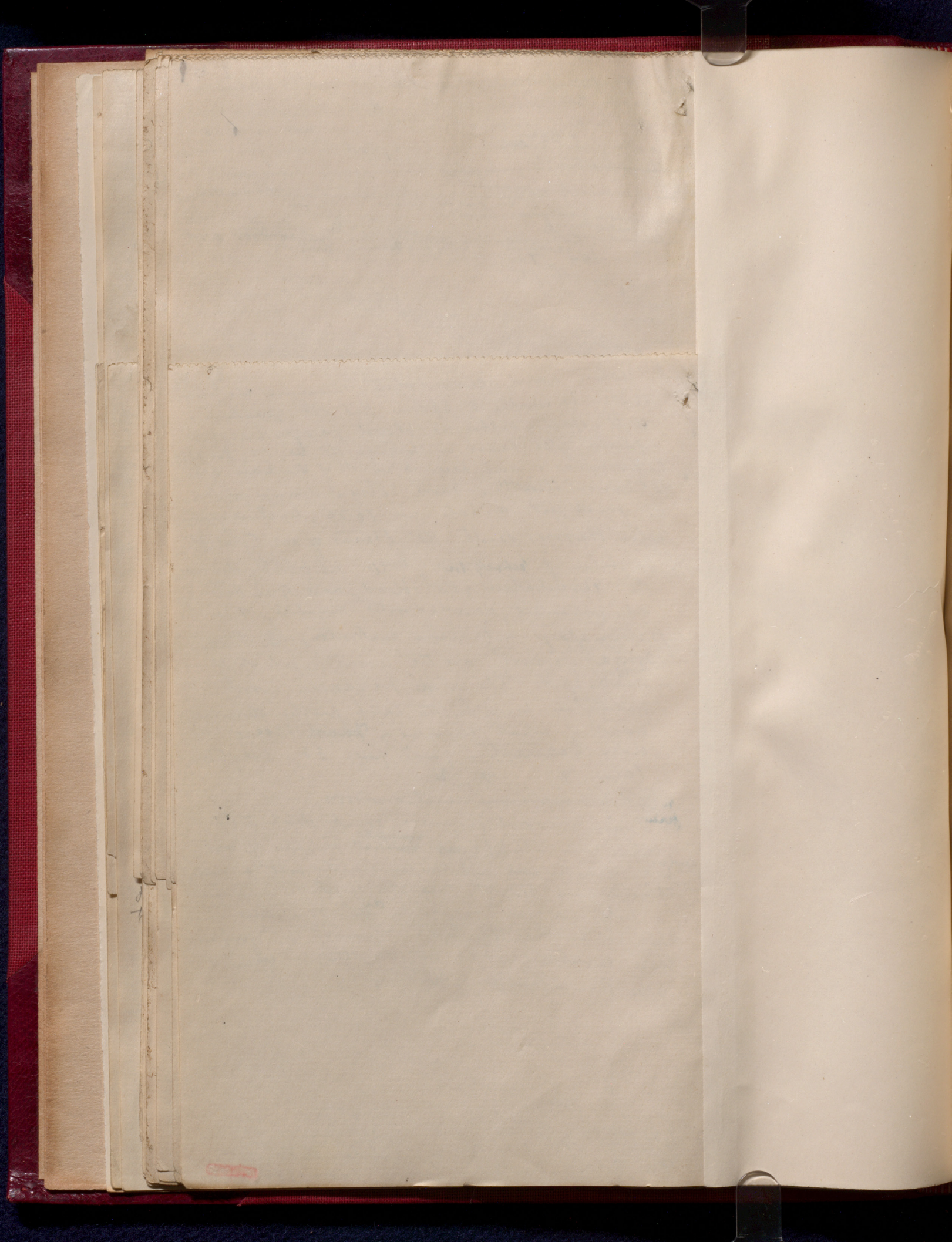
The house at 15 rue de la Harpe
He cleared the garden in the
in near behind in the garden of the house
of the house on 15 rue de la Harpe

hard and through all the mists of prejudice
+ hate we can recognize the good sense which
had the courage to protect against the "forfau-
lteré Arabesque et bezoardesque" ⁱⁿ much
of the Therapeutics of this day.

1. Lellwys - Vol 1 p 324. edite. 1692
2. Qui Palut Pontfelin Larmien Paris 1884

~~Ridout died unconverted in 1657~~

2 Que Pasa ¹⁸⁷⁴ Edite. 1874
Bonfils Larmen Paris 1886



35
Though a Professor in the Paris Faculty and a
brilliant lecturer Patin ^{at that time} did not occupy a dis-
tinguished position ~~in the~~ but was his opposition
of such importance as that of Rivian, - "John
Rivian the Son, the most experienced Physician
in the University of Paris the Prince of Dissection
of Bodies, and the Kings Professor, and Dean of
Anatomy and of the knowledge of simple, Chief
Physician to the Queen Mother of Lewis XIII"
as he is equally ^{expressly} described by Harvey. Brought
up by his father to regard ~~the~~ Hippocra-
tes & Galen as the sources of all wisdom, ^{his}
the intensely ^{of his} zeal increased with his years until
~~at~~ at last "to see the physics of Galen kept
in good repair." became the passion of his life
The deep pity of it all is that such mental
blindness should have stricken a really great
man, for he was a brilliant anatomist &
teacher, the author of the best text-book
on the subject of its day, a man of affair,
^{profoundly} ~~deeply~~ versed in literature, a successful
practitioner, & for years the head of the
profession in France. The opposition of
such a man was serious and ~~undoubtedly~~ had
a profound influence →

(over) + at top

(1) Four lines at foot

[illegible]

known in the cuneiform stage, truth
in its sterile without influence on progress or
any aspect of human activity. One of the most
notable phenomena in the intellectual history
world is the failure of the Greeks to succeed
in making such a start. They had every
type of imagination, keen powers of observation &
the days of Hippocrates ~~experiment~~ the mathe-
matical method of interrogating nature prevailed
over them the experimental, Galen carried that
on to a degree of perfection never again reached
at the time of Harvey. Only when placed in its
position in relation to Greek religion & philo-

The satire of Moliere and the
"Carrot Burlesque of Berleau" completed the
discomfiture of the "anti-Circulatores", but
it had taken nearly a half century to overcome
the opposition of those who saw in the new
doctrines the complete destruction of the an-
cient system of medicine

(1) Four lines at foot

Recluse

(1) The medium on which the inscription of the name *de Recluse* 1863
 in the inscription of the name *de Recluse*
 shows a similarity at the same time as the
 with 1173 when the XIV printed a special
 the official recognition in France and in some
 supporting the circulation and only through the
 occurred (Paris, 1863, 1865) the
 him in the face. As Raymond mentions in
 he could not see the truth which was obvious
 that it was not that he would not be that
 better in so well as any more of the same

By far the most interesting of Harvey's critics is "John
 Recluse, the Son, the most experienced Physician of
 the University of Paris, the Prince of Medicine, Bodin
 and the King's Professor, and Dean of Anatomy and
 the Knowledge of Sciences, Chief Physician to the Queen
 mother of Louis XIII" as he is quaintly styled by Harvey
 in the well known letter to him in 1649.

Every when ^{from} ~~from~~ ^{grown} in the cuneus stage, Truth
may remain sterile without influence on progress or
on any aspects of human activity. One of the most
remarkable phenomena in the intellectual history
of the world is the failure of the Greeks to succeed
after making such a ^{glorious} start. They had everything
^{supr. essential} - scientific imagination, keen powers of observation &
in the days of Hippocrates ~~experiment~~ the mathe-
matical method of interrogating nature prevailed
rather than the experimental. Galen carried that
letter to a degree of perfection never again reached
until the time of Harvey. Only when placed in its
true position in relation to Greek religion & philo-
sophy as has been done so skillfully by Gom-
pers ⁽¹⁾ do we realize the immensity of the
^{without} debt to these ^{our young} light-hearted "Masters" of the
ancient fires. They kindled and Gompers makes clear
the greatness of the debt of Greek science to the
practical sense of the physicians. But ^{alas} from the
fires they kindled were poured the "dust &
ashes" of contending philosophic systems
and not even their ~~replenishing~~ ^{replenishing} of the fires by
the great men of the Alexandrian school nor the
brilliant ~~labours~~ ^{labours} in the 2nd century A.D. of the
most ~~encyclopaedic~~ ^{encyclopaedic} mind that had ever been given to
medicine sufficed to ~~avert~~ ^{avert} the slow decay
decadence ^{fortunes} here & there amidst the embers
of the middle ages glowed the coals from which
the Renaissance lighted the fires of modern
progress. ^{Special} ^{which divides modern from}
The ~~one~~ ^{great} distinction ^{between ancient}
~~modern science~~ ^{modern science} is its fruitful application
it to human needs - not that this was unknown
to the Greeks but the practical application
of the knowledge of the laws of life and matter has
(1) The three volumes of his Greek thinkers are now
in English dress, and should be studied by every young
man who wishes to get at the foundations of philosophy
the modern style of Prof. Gomperz and the (leave a line)
While Bacon was thinking
acting and before Descartes had left his happy
school at ^{le Fleche} ~~Harvey~~ ^{Harvey} had was using the great
~~method~~ ^{le nouvelle methode} and in this way
the ~~de motu cordis~~ marks the final break of the modern
spirit with the old methods traditions. No longer were
men to rest content with careful observation with
accurate description, no longer were men to be content
with fairly spun theories & dreams which serve as a
common subterfuge of ignorance, but here for the
first time was a great physiological problem appro-
ached from the experimental side by a man
with a modern scientific mind who could wage
warfare and not go beyond it, and who had the
sense to let the conclusion fall naturally but firmly
from the observations (over)

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For the age of the ear but succeeded at the age of the eye & now
 comes the age of the hand, I am thinking of drawing diagrams
 to show the development of what I want to treat from the
 hand & space confinement will what to treat from the
 ear & so on. I am not sure if I have not introduced a model little picture
 of each from which we may take the foregoing. While there is no possibility
 of permanent medicine. I have now a man in study
 lower 5 lines

to the age the ear had succeeded the eye the eye & now
saw the eye the hand, the thinking observing planning
and reason - ~~entirement~~ - will extend to intellect from which
has ~~been~~ ^{been} ~~in~~ ⁱⁿ ~~introduced~~ ^{introduced} in a ~~model~~ ^{model} little ~~product~~
of high form which we may date its beginning
of permanent medium. While horses are being made
the problem there was a man in study
Lower 5 lines

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when a loose tongue was unbridled. One & over again ^{must have} restrained himself, and as in his cardroom with Rivton & others for the sake of old friendship he could not find in his heart to say anything since ^{last} Saturday, today this command is easier to follow. When the ^{dearest} courtesies of life have ~~departed~~ ^{and we have} ~~lost~~ ^{interest in our nature} made us more considerate. ^{For} these small weaknesses which give diversity to character without necessarily marring it. ^{Since} no man does the right spirit in these matters come without cultivation, and I would urge upon the younger fellows to lay to to weigh well these wretched words of great & simple, whose glory reflected such lustre upon English medicine and whom we honour in this college not less for the scientific spirit method which he inculcated than for the life

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history of Harvey's life and a knowledge of the method of his
work should be the best stimulus to the Fellows and members
to carry out the second and third of his commands
and the final one to continue in love and affection among
ourselves should not today be difficult to realize. Surely
as Harvey must have been and naturally of a cholerick
disposition only once in his writings, so far as I have read,
does the old adage break out. With his temperament
with such provocation there is an unexampled record
we can appreciate how much was revealed in those days
when the tongue and pen were free. Over & over again he
must have restrained himself as he did in the contro-
versy with Rivlin. I know in the case of old friendship
I could not find it in his heart to say anything severe.
To day his command is easier to follow when the
consequences have made us more considerate towards
those small weaknesses, inherent in our nature which

But the moving hand reminds, our Order, Mr. President,
of the burden duty laid upon him by our Great Declator
to commemorate on this occasion by name all your
benefactors, to urge others to follow their example, to
exhort the Fellows and Members to study not the secrets
of nature by way of experiment, and lastly for the honour
of the profession to continue in love and affection among
ourselves. No greater tribute to ^{these} benefactors than
these sentences in which he thus established this section-
ship breathing as they do the very spirit of the man and
revealing to us his heart of hearts. Doubtless no one
more than he rejoices that our benefactors have now be-
come so numerous as to make the first injunction al-
most impossible and the best we can do is to give a
general expression of our thanks and to mention here a
few as I have done the more notable among them. But
this is not enough. While we are praising famous men
honoured in their day and the glory of this College the
touching words of the Son of Sorach remind us - "Some there
be that have no memory, who are perished as though
they had never been born and are become as though
they had never been born". Such memory as they had
has blotted out and upon them the integrity of
Oblivion has blindly scattered her poppy. A few are
embalmed in the biographical dictionaries, a few are
dragged to light every year at Sothebys or the memory
is stored to remembrance as we talk down an old
volume from our shelves, but for the immense ma-
jority on the long roll our Fellows - names, names, names,
nothing more, a catalogue as dry & meaningless as
that of the ships or as the genealogies of David in
book of Chronicles. Even the dignity of the presidential
chair does not suffice to float a man down the page
of Charles that have passed since the foundation of the
College. Who was Parkman ^{Forster} who was Atkins? per-
haps two or three among us could tell at once
and yet by these men the continuity and organic
life of the College has been ~~maintained~~ carried on
and in maintaining its honour and furthering its
welfare such one in his day was a benefactor whose
memory it is our duty, as it should be our plea-
sure to recall. (Bedecked prayer.)
The nobility of the profession depends upon this
great cloud of witnesses who pass into the silent land
pass and leave no sign. ^{it was} as becoming things they
had never been born" and the pathos of this fact, not
less pathetic because common to all coming from the
great host the ~~memorable~~ comparison of the race of David to
the race of leaves.

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Theology of Harvey's life and a knowledge of the method of his
 work should be the best stimulus to the fellows and members
 to carry out the second and third of his commands
 and the final one to continue in love and affection among
 ourselves should not today be difficult to realize. Surely
 tried as Harvey must have been and naturally of a choleric
 disposition, only once in his writings, so far as I have read,
 does the old Adam break out. But his temperament &
 with such provocation there is an unaccomplished record
 and can appreciate how much was revealed in those days
 when the tongue & pen were free. Over & over again he
 must have restrained himself as he did in the contro-
 versy with Rivlin. I know for the sake of old friendship
 he could not find it in his heart to say anything severe.
 To day his command is easier to follow when the
^{desires} ~~desires~~ ^{of life} ~~of life~~ have made us more considerate towards
 those small weaknesses, inherent in our nature which
 give diversity to character without necessarily
 marred ^{the} ~~the~~ ^{character} ~~character~~ to no man does the right spirit
 in these matters come ^{by nature} ~~without~~ cultivation. I would urge
 upon our younger fellows & members to weigh well
 those winged words of our great exemplar ^{and gather up} ~~which~~
 will shed such lustre upon English medicine and
 whom we honour in this college not less for the occu-
 pation method which he inculcated than for the life

from 1

Dec 1886

It was not a case of doubting, surely in strange ways
 as the great Dean got Paul's advice in here the doubt arose
 in ways familiar to him from the very beginning of his
 studies. When did the great Doubt - this
 with a true Cartesian mind he sought to know things
 and did not rest satisfied in mere conjecture

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to reach that tranquility, good which he possesses
that same outburst on the world and that path of
able aspiration

Phrases &c

To understand clearly our position today in any science we must go back to its beginnings and trace the gradual development which follows certain laws, ~~difficult to trace~~ ^{often} ~~astonished~~ ^{in the brilliancy of achievements}, laws which have everywhere the fundamental features in common - they represent the biography of the ~~human mind~~ ^{mind} ~~as it evolved~~ ^{evolved} in the result of human endeavor working through the ~~medium of the~~ ^{medium of the}

To brush ~~off~~ ^{away} all preconceived ideas & beliefs, the accepted dogmas of the schools, the teachings of his teachers

We have no record when the pang of doubt first seized him - perhaps it was in the beautiful new sunlight at Padua as he listened to Fabrizio and saw his beautiful demonstration of the oscillation and in a moment of ~~inspiration~~ ^{inspiration} ~~then~~ ^{then} ~~an~~ ^{an} ~~inspiration~~ ^{inspiration} ~~condition~~ ^{condition} by the dominant ideal view of the motion of the blood

The whole trend of his career could have been predicted from the ~~the~~ ^{the} ~~date of his~~ ^{date of his} Paduan diploma

Authority still lay like a fall in the minds of men and the battle for academic freedom had scarcely begun. The condemnation of Galileo in 1633 was one thing, the we do not think his invention inevitable

was ever so remarkable a message delivered in so remarkable a way.

not a single life but often many generations of men

In 1616 Descartes was studying law at Padua

It was not a case of doubting merely in strange ways as the great men of Padua advised but here the doubt arose in ways familiar to him from the very beginning of his studies. When did the great doubt - this

with a true Cartesian mind he sought to know things and did not rest satisfied in mere conjecture

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Phrases &c

To understand clearly our position today in any science we must go back to its beginnings and trace the gradual development which follows certain laws, ~~difficult to follow~~ ^{often} ~~in the brilliancy of achievements~~ ^{often} ~~which have everywhere~~ ^{the} fundamental features in common - they represent the biography of the human mind, ~~the~~ ^{and} evolved in the result of human endeavor working through long ages. The human measure principle has a far wider application than dreamt of by its author, is ~~only~~ ^{only} true in matters relating to ~~the~~ ^{the} ~~mind~~ ^{mind} since of all the mental treasures of the race that dealing with it alone compel general acquiescence in their belief. This general acquiescence, this aspect of truth and ~~is not~~ ^{is not} ~~reached~~ ^{reached} per se but is itself a slow & difficult growth, everywhere marked with the failings & frailties of human effort but crowned at last with an acceptance accorded to no other products of mental activity.

To trace the growth of truth - the sources where it sprang & the gradual evolution has a fascinating interest fascinating in direct proportion to our understanding the conditions of its origin and growth. ~~Knowledge of the~~ ^{Knowledge of the} men who have been the instruments of its propagation. And herein lies the chief function of history - that we may see as in a mirror the reflection of ourselves, to find stimulating changes in the study of the steps by which the status process has been reached, to read in the record of the failures lessons which may be helpful in our everyday life. The growth of truth.

Phrases & notes

The intelligent placement of natural phenomena through "In the middle of the 17th century there came a phy. one day a mechanical kind of computation" Psycho-physics - what may be done.

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There are three well recognized laws with reference to
scientific truth. In the first place it is conditioned by the
state of the knowledge at the time. In the beginning of the
17th century for example there was no microscope
to all intents & purposes no blood corpuscles or capillary
vessels existed

or to be wounded at when there were 50 6 clams on
the apparatus phosphorus and 30 on his regimen
7 being nothing of addit on in Galen, Avicenna, Rhazes
, Fernel

Thores. Bio Optimo Maximo, Vergini Deepara et
Sancto Lucae

Act of the Paranymphe

Science is a search for the unknown - slow & painful

For est most said Bartholin who curd an epileptic
burlesque

a search for the unknown

14 systematized the experience which he had gained
by experiments and drew systematic inference - great
analysis & the deductive Bacon & the induction method
Galileo & the empirical method.
Harris first described the fact - and then explained it by
the cause - motion of the

9th - The truth about things. 1st step recognition
sceptical attitude of science greatly fostered by
Descartes

See T. H. Morgan. Cell growth - the dictation
of authority - the peremptory assertion
of authority - p 34. Exact growth.

Hubble - Campanella revived

Stannard's Plus ultra - Encyclopaedia study of method
Stannard

p 46 Cor of the blood.

"No play adapted it and when it got into vogue
they then disputed whether he was the discoverer"

See Disraeli's Miscellaneous of Literature - vesp

7 See W. Temple refused to read it he did

The intelligent & placement of natural phenomena

Through "In the middle of the 17th century there came to
phys. one does of a mechanical kind of computation"

Psycho-physics - what may be done.

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Have well recognized laws with reference to

Two like wounded at when there were 500 soldiers in
the apparatus of Hippocrates and 30 on his regimen
→ trying nothing of added use in Galen, Avicenna, Rhazes,
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Thores. 880 Optimo Maximo, Vergini Deepara et
Sancto Lucae

Act of the Paranymphe

Tence is a search for the unknown - slow & painful
to for est most said Bartholin who camp an episode
burlesque

I suppose for a moment that at the next. Lumben
lecture - or perhaps the Guldsmid the lecture
should tell again

9 P. called - the library quae est lumben ocatorum
et laborum solatium.

Falmeret had 50000 vol.

Pl. Jacobi. non de flux & Paul. de curis et de Joub.
the Great 17th cent. bibliography

The good and wholesome doctrine of Hippocrates

→ "Forfautent drabesque et bezvandesque" of
the therapeutics of the day

In System of Galen was wrong the

→ standard had changed since his time

In 1545 the Chinese had lost the value of
the veins.

→ Tazon in 1663 published a thesis & later that
was supplanted. (the Magnet)

illustrates the growth of

Never before has the world had such a lesson as
the which Japan has taught us of the nature of power
in shunning noble efforts in
he was ^{one of the} masterless man with an
instinct for truth, with a capacity to measure
the world, & to use his own eyes in his own way and
to see the whole ^{where} others had seen ^{but} himself in part
here across the centuries that stretch between Galen &
Livy & Co.

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11. Plato ΦΙΛΕΒΟΣ = art & sens
 " but mentions the art.
 " The blood is forcibly carried round till
 the members. Τὸ αἷμα κατὰ πάντα τὰ
 μέλη σφοδρῶς περιφέρεισθαι. W.
 thinks it may have influenced Casalpini

13. Aristotle - nerves from the heart

16. Prascagoras first to use the word pulse in
 the modern sense - dis. 2 sorts of res
 art. let in the nerves

17. Hierophilus First called Pul. ar. vena
 arteriosa. & Pul. art. arteria venosa
 des. pulse well

18. Crispianus - when art wounded
 blood of neighb. vein made to mix
 thro - he knew of the anastomosis
 knew the function of the valves

21. Hippocrates " For in a circle you find no
 beginning " - speaking of the veins -
 " But like rivers, not comforting themselves
 according to wind, when the course of the
 blood is interrupted " . ἡμὰτος περίστροφον
 = Sanguis circulator & in the Ven
 der denden (465-9. de Cereb) maintains
 that Hippocrates knew of the circuit.
 The χοῦρα = the chordae tendinae

47. Rabelanus . BM III. ch 4. ch 21. Follows
 Galen . ch 14. - again Galen

50. Sylvius Jacobus . L 1487 - 111 gave names
 to the muscles - Heart = Galen then
 valves &c. - des. for valves folded as
 & valves of the penis 1536 - first used
 injection. In Hippocrates & Galen Physiol
 Isagog. Venet. 1536. 12 mo

55. Quintensis - Under 1487-1574 Master of Ves
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 of vessels - see orig

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61. Vesal - *lib. anat. p. 67* - Follows the the
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670. Lervetus - *gib. his Dialogi duo de Trinitate*
 1532.

London,

87. Columbus. *Cremone*. - succeeded Vesal
 lives the "head front origin & not" of the veins
 Heart not to be nervous as a muscle.
 R.V. = nat. blood. d.V. relat. 3-rd.

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xford.

26. Galen. H. equal source of heart - a lamp which
 is furnished with oil by the blood & by air from
 the lungs. Knew the mus. ch. of the
 knew rat & was
 Sanguineus. ventricle = R, spiritus vent. = L.
 Knew the anatomy of V. & art. - knew
 you could drain art. & veins alike from
 a cut artery -
 Speaks of the origin of the ar. ven & hence
 artery. & knew the lesser circulation
 definitely. but not used as we do
 Harvey. accident - Galen. -
 2 kinds of blood, 2 kinds of vessels, 2 sides of
 the heart
 Galen 1st - no ven in heart.

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Ind. lib. 1478 when in folio at
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" 47. *Rabelius*. *Blk III. ch 4. ch 21. Follows*
Galen. ch 14. - again Galen

" 50. *Sylvius Jacobus*. *L 1487* - 1st gave names
 to the muscles - Heart = Galen. knew
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 & valves of the penis 1536 - first used
 injection. In Hippocrates & Galen. *Physiol.*
Isagoge. Venet. 1536. 12 mo

" 55. *Quintorius* - *Univ. 1487-1574* Master of Ves
 & Lervetus - see his *Anat. Dusselin*. when he speaks
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p 61. Vesal - post anat. p 67 - Follows the the
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p 70 Lervetus - got his Oratogi duo de Trinitate London,
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Lives the "head front origin & not" of the veins
Heart not to be nervous as a muscle.
R.V. = nat. blood. L.V. red. S. - red.

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96 Eustachius - died R. 1574

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critic of Vesal - Observat. Anatomico. 1562.

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e student, not of the scholar. In my own case, a deep
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THE GROWTH OF TRUTH

Orig 52

as illustrated in the Discovery of the Circulation of the Blood,

The Harveian Oration delivered at the Royal College of Physicians, London,

October 18th., 1906,

by

William Osler, M.D., F.R.S., *in the University of* Regius Professor of Medicine *at* Oxford.

I.

held
Only those of us, Mr. President and Fellows, who have had the good fortune to hold the distinguished position which by your kind grace, Sir, I ~~to~~ to-day, - only those of ~~those~~ *us* who have delivered ~~a~~ *the* Harveian Oration, can appreciate the extraordinary difficulties ~~that~~ *beset* a subject, every aspect of which has been considered, very often, too, by men who have brought to the task a combination of learning and literary skill at once the envy and ~~despair~~ *the* of their successors. But I take it, Sir, that in this Ambervalia or commemorative festival *for blessing the fruits* of our great men, ordained definitely as such by him whose memory is chiefly in our minds to-day, our presence here in due order and array, confers distinction upon an occasion of which the Oration is but an incident. But, honour worthy of such a theme, should be associated with full knowledge of the conditions under which these *great* men lived and moved; and here comes in the real difficulty, *because* it is rarely possible to bring the fruits of independent critical investigation into their lives and works. Particularly hard is it for those of us who have had to live the life of the arena, ~~and~~ *and* our best efforts bear the stamp of the student, not of the scholar. In my own case, a deep reverence for the mighty minds of old, and a keen appreciation of the importance to our profession of a study of history, may be put in the scales against defects

2.

*remaining**as to*

~~for~~ the appreciation of which I have still ~~not~~ sufficient self-detachment.

The lesson of the day is the lesson of their lives. ~~But in~~ *because of* the ever-increasing mental strain in this ~~rising~~ *of hurry and* age few have the leisure, fewer still I fear, the inclination, *on for* to read it thoroughly. Only with a knowledge of the persistency with which they waged the battle for Truth, and the greatness of their victory, does the memory of the illustrious dead become duly precious to us.

History History is simply the biography of the mind of man, and our interest in ~~it~~ *history*, and its educational value to us, is directly proportionate to the completeness of our study of *the* individuals through whom this mind has been manifested. To understand clearly our position in any science to-day, we must go back to its beginnings; and trace its gradual development, following certain laws, difficult to interpret and often obscured in the brilliancy of achievements;—laws which everywhere illustrate this biography, this human endeavour, working through the long ages; and particularly is this the case with ~~the~~ *at* history of the organized experience of the race, which we call science.

In the first place, like a living organism *Truth* Truth grows, and its gradual evolution may be traced from the tiny germ to the mature product. Never springing, Minerva-like, to full stature at once, ~~it~~ *Truth* may suffer all the hazards incident to generation and gestation, ~~and~~ much of history is a record of the mishaps of truths which have struggled to the birth, only to die or *else* to wither in premature decay. Or, the germ may be dormant for centuries, awaiting the fulness of time.

Secondly ~~In the second place~~, all scientific truth is conditioned by the state of knowledge at the time of its announcement. Thus, at the beginning of the seventeenth century, *the sciences of* ~~mechanical~~ *and mechanical appliances* optics had not made possible (so far as the human mind was concerned) the existence of blood capillaries and blood corpuscles.

3.

Memo
Jenner could not have added to his ~~Observations~~ ^{insights} a discourse on immunity;
Sir William Perkin and the ~~chymists~~ ^{chemists} made Koch possible; Pasteur gave the
conditions that produced Lister; Davy and others furnished the preliminaries
necessary for anaesthesia. Everywhere we find ~~an~~ ^{these} invariable filiation, one
event following the other in orderly sequence--"mind begets mind," as Harvey says,
"opinion is the source of opinion. Democritus with his atoms, and Eudoxus with
his chief good, which he placed in pleasure, impregnated Epicurus; the four
elements of Empedocles, Aristotle; the doctrine of the ancient Thebans, ~~Pythago~~
Pythagoras and ~~Plato~~ ^{Plato}; geometry, Euclid." (De Generatione.)

And thirdly, to scientific truth alone may the homo mensura principle be
applied, since of all mental treasures of the race ~~these alone dealing with it~~
~~compel~~ general acquiescence ~~in their beliefs~~. That this general acquiescence,
this aspect of certainty, is not reached per saltum, but is of slow, often of
difficult growth, ^{marked} by failures and frailties, but crowned at last with
an acceptance accorded to no other product of mental activity ^{is} illustrated
by every important discovery from Copernicus to Darwin.

The growth of ^{Truth} corresponds to the states of knowledge described by Plato
in the Theaetetus--acquisition, latent possession, conscious possession.
Scarcely a discovery can be named which does not present ^{these phases in its} ~~this~~ evolution. Take,
for example, one of the most recent. Long years of labour gave us a full
knowledge of ~~all the details of~~ Syphilis--centuries of acquisition added one
fact to another, until we had a body of clinical and pathological knowledge of
remarkable fulness. For the last quarter of a century we have had latent
possession of the cause of the disease, as no one could doubt the legitimate
inferences from discoveries in other acute infections. The conscious

Pearce
 possession has just been ~~given~~ ^{4.} to us. After scores of investigators had struggled in vain with the problem, came Schaudinn with an instinct for truth, with a capacity to pass beyond the routine of his day, and with a vision for the whole where others had seen but ~~in~~ ⁱⁿ part. It is one of the tragedies of science that this brilliant investigator, with capabilities for work so phenomenal, should have been cut off at the very threshold of his career. The cancer problem, still in the stage of latent possession, awaits the advent of a man of ~~this~~ ^{the same} type. In ~~a~~ ^{hundred} other less important problems, by slow stages acquisition has become latent possession; and there needs but the final touch, the crystal in the saturated solution, to give us conscious possession of the truth. But ~~when~~ ^{when} these stages ~~are~~ ^{are} ended, there remains the final struggle for general acceptance. Locke's remark that "Truth scarce ever yet carried it by vote anywhere at its first appearance" is borne out by the history of all discoveries of the first rank. The times, however, are changing, and it is interesting to compare the cordial welcome of the pallid spirochete with the chilly reception of ^{the} tubercle bacillus. Villemin had done his great work, Cohnheim and Salmonson had finally ~~solved~~ ^{solved} the problem ^{of infectivity} when Koch published his memorable studies. Others before him had seen the bacillus, ~~the infective nature of the disease was recognized~~, but the conscious possession of the truth only came with his marvellous technique. Think of the struggle ^{secure} to acceptance! The seniors among us who lived through that instructive period remember well that only those who were awake when the dawn appeared ~~accepted~~ ^{assented} at once ^{to the brilliant} ~~Koch's~~ demonstration. We are better prepared to-day; and a great discovery like that of Schaudinn is immediately put to the test by experts in many lands, and a verdict is ~~reached~~ ^{given} in a few months. We may have become more plastic and receptive, but I doubt it; ~~since~~ ^{even} our generation--that great generation of the

last quarter of the nineteenth century, had a practical demonstration of the slowness of the acceptance of an obvious truth in the long fight for the aseptic treatment of wounds. There may be present some who listened, as I did in October, 1873, to an introductory lecture at one of the largest of the Metropolitan Schools, the burden of which was the Finality of Surgery. The distinguished author and teacher, dwelling on the remarkable achievements of the past, concluded that the art had ~~about~~ ^{all but} reached its limit; little recking that within a mile from where he spoke, the truth for which he and thousands had been striving, now a conscious possession in the hands of Joseph Lister, would revolutionize it. With scores of surgeons, here and there throughout the world, this truth had been a latent possession. Wounds had healed per primam since Machaon's day; and there were men before Joseph Lister who had striven for cleanliness in surgical technique; but not until he appeared could a great truth become so manifest that it everywhere compelled acquiescence. ~~Yet~~ ^{Not} without a battle--a long and greivous ~~one~~ ^{battle}, as many of us well know who had to contend in hospitals with the opposition of men who could not ~~not~~ ^{who} would not ~~see~~ ^H the truth.

Sooner or later, insensibly, unconsciously, the iron yoke of conformity is upon our necks; and in our minds, as in our bodies, the force of habit becomes irresistible. From our teachers and associates, from our reading, from the social atmosphere about us, we catch the beliefs of the day, and they become ingrained--part of our nature.

For most of us this happens in the hap-hazard process we call education; and it goes on ^{just as} ~~as~~ long as we retain any mental receptivity. It was never better expressed than in the famous lines that occurred to Henry Sidgwick in his sleep:-

last quarter of the nineteenth century, had a spiritual deterioration of the
element of the acceptance of an obvious truth in the last fight for the
scientific treatment of wounds. There are no present cases who listened as I
did in October, 1878, to an introductory lecture at one of the lectures of the
Metropolitan School, the burden of which was the finality of surgery. The
distinguished author and teacher dealing on the remarkable achievement of the
past concluded that the art had reached its limit. It is evident that
within a little from where he spoke, the truth for which he and Schenck had
been striving was a complete separation in the hands of Joseph Lister, would
revolutionize it. With reason of evidence here and there throughout the world
this truth had been a latent possession. Schenck had sealed but failed when
Richardson's boy, and there were now before Joseph Lister who had studied for
themselves in surgical technique; but not until he appeared could a great truth
be so rapidly that it everywhere revealed its presence.
It is a long and grave duty of us who have who had to content it
with the opposition of men who could not see the truth.
Sooner or later, inevitably, eventually, the two poles of controversy in
surgery meet; and in our minds as in our bodies, the laws of health become
irreconcilable. From our teachers and ourselves, from our
social atmosphere about us we catch the pulse of the day and they become
a part of our nature.
The age of us this happens in the development process we call education; and it
soon as we long as we retain any social responsibility. It was never better
expressed than in the famous lines that we read to Henry Higgins in his sleep:-

6.

"We think so because all other people think so;
 Or because-or because-after all, we do think so;
 Or because we were told so, and think we must think so;
 Or because we once thought so, and think we still think so;
 Or because, having thought so, we think we will think so."

In departing from any settled opinion or belief, the variation, the change, the break with custom may come gradually; and the way is usually prepared; but the final break is made, as a rule, by some one individual, the masterless man of Kipling's splendid allegory, who sees with his own eyes; and with an instinct or genius for truth, escapes from the routine in which his fellows live.

But he often pays dearly for his boldness. Walter Bagehot tells us that the pain of a new idea is one of the greatest pains to human nature. "It is, as people say, so upsetting; it makes you think that, after all, your favourite notions may be wrong, your firmest beliefs ill-founded; it is certain that till now there was no place allotted in your mind to the new and startling inhabitant; and now that it has conquered an entrance you do not at once see which of your old ideas it will not turn out, with which of them it can be reconciled, and with which it is at essential enmity." It is on this account that the

~~original~~ ^{represents} man, who brings a new idea, is very apt to be abused and ill-treated. All this is common among common men, but there is something much worse which has been illustrated over and over again in ~~the~~ history. How eminent so ever a man may become in science, he is very apt to carry with him errors ^{which} ~~that~~ were in vogue when he was young, errors that darken his understanding, and make him incapable of accepting even the most obvious truths. It is a great consolation to know that even Harvey came within the range of this law--it is the most human touch in his career.

On the matter of the lymphatic system

Footnote

we think so because all other people think so;
Or because-or because-after all, we do think so;
Or because we were told so, and think we must think so;
Or because we once thought so, and think we still think so;
Or because, having thought so, we think we will think so."

In departing from any settled opinion or belief, the student, the scholar,
the break with custom may come gradually; and the way is usually prepared; but
the final break is made, as a rule, by some one individual, the masterless man
of Epictetus's splendid allegory, who came with his own eyes; and with an intention
or genius for truth, escapes from the bondage in which his fellows live.
But he often pays dearly for his freedom. He is hated, he is persecuted, he is
pain of a new idea is one of the heaviest to human nature. It is, as
people say, no question, it takes a long time to get used to a new
idea may be worth, your former beliefs are all-true, but they are all-true
and there was no place allowed in your mind for the new and startling idea-
ment, and now that it has conquered its enemy, it does not let it go, it
new old ideas it will not let go, with which it has been so reconciled,
and with which it is so essential unity. It is on this account that the
man, who is a new idea, is very apt to be misunderstood and ill-treated.
All this is common enough, common even, but there is something more which has
been illustrated over and over again in the history. How common is such a man
any progress in history, he is very apt to carry with him the errors of his
when he was young, errors that he has not outgrown, and make his progress of
regarding even the most obvious truths. It is a great consolation to know that
even Harvey came within the range of error, for it is the best human touch in his

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7.

By no single event in the history of science is the growth of truth, through the slow stages of acquisition, the briefer period of latent possession, and ^{for us} the still ~~glorious~~ ^{glorious} period of conscious possession, better shown than in the discovery of the circulation of the blood. You will all agree with me that a fellow of this college must take his courage in both hands who would, in this place and before this audience, attempt to discuss any aspect of this problem. After nearly three centuries of orations the very pictures and books in this hall might be expected to cry out upon him. But I have so taken my courage, confident that in using it to illustrate certain aspects of the growth of truth, I am but obeying the command of Plato, who insists that principles such as these cannot be too often or too strongly enforced. There is a younger generation too, the members of which are never the worse for the repetition of a good story, stale though it may be in all its aspects to their elders; and then there is that larger audience to be considered to which the season is never inappropriate to speak a word.

II.

The sixteenth century, drawing to a close, had been a period of acquisition unequaled in history. Brooding over the face of the waters of mediaevalism, the spirit of the Renaissance brought forth a science of the world and of man which practically created a new heaven and a new earth, and the truths announced by Copernicus and Galileo far transcended

"The searching schoolmen's view

And half had staggered that stout Stagyrice."

Among other things it had given to medicine a new spirit, a new anatomy and a new chemistry. In the latter part of the fifteenth century Hippocrates and Galen came to their own again. A wave of enthusiasm for the fathers in medicine swept over the profession; and for at least two generations the best energies of its best minds were devoted to the study of their writings. How numerous and important is that remarkable group of men, the medical

no single event in the history of science is the growth of French, through the
new stages of acquisition, the better period of latest possession, and the well
known period of conscious possession, better known than in the discovery of the

of the blood. You will all agree with me that a failure of this
college must take his course in French lands who would, in this place and before
this audience, attempt to discuss any aspect of this problem. After nearly three

centuries of creation the very pictures and books in this hall might be expected
to cry out upon him. But I have so taken my courage, confident that in using it
to illustrate certain aspects of the growth of French, I am but obeying the

command of French who insists that principles such as these cannot be too often or
too strongly enforced. There is a younger generation too, the members of which
are never the worse for the repetition of a good story, while though it may be in
all the aspects to their elders; and then there is that larger audience to be

addressed in which the message is never to be repeated to again a word.

the sixteenth century, drawing to a close, had been a period of acquisition
and equalled in history. Proceeding over the face of the history of acquisition, the
spirit of the Renaissance brought forth a science of the world and of man which
practically created a new heaven and a new earth, and the French announced by

the French Renaissance and called for transcendental

the French Renaissance's view
and had established that great Renaissance.
many other things it had given to medicine a new spirit, a new anatomy and a new
chemistry. In the latter part of the fifteenth century Hippocrates and Galen
came to their own again. A wave of enthusiasm for the fathers in medicine swept
over the profession; and for at least two generations the best energies of its
best minds were devoted to the study of their writings. How numerous and

important is that Renaissance group of men, the medical

8.

humanists of the Renaissance, we may judge by a glance at Bayle's Biographie Médicale, in which the lives are arranged in chronological order. From Garbo of Bologna, surnamed the expositor, to Rabelais, more than one hundred and fifty biographies and bibliographies are given, ^{and at least} ~~more than~~ one half of these men had either translated or edited works of the Greek physicians. Of our founder, one of the most distinguished of the group, and of his influence in reviving the study of Galen and ^{so} ~~of his influence~~ ^{of his influence} indirectly upon Harvey, Dr. Payne's story still lingers in ~~our memories~~ ^{us}, Leonicens, Linacre, Gaulthier, Monti, Koch, Camerarius, Caius, Fuchs, Serbi, Cornarus, and men of their stamp not only swept away Arabian impurities from the medicine of the day, but they revived Greek ^{introduced} ~~new~~ scientific methods ~~of study~~.

The great practical acquisition of the century was a new anatomy. Vesalius and his followers gave for the first time an accurate account of the structure of the human body, and while thus enlarging and correcting the work of Galen, contributed to weaken the almost divine authority with which he dominated the schools. Nearly another century ~~had~~ passed before chemistry, in the hands of Boyle and others, reached its modern phase, but the work of Paracelsus, based on that of the 'pious Spagyrist', Basil Valentine, by showing ^{its} ~~the~~ possibilities ~~to~~ the new science ^{had} directed men's minds strongly ^{to it}. ~~But~~ ^{of} the three the new spirit alone was essential, since it ~~brought~~ ^{established} the intellectual and moral freedom by which the fetters of Dogma, Authority and Scholasticism were forever loosened from ^{the} minds of men.

^{we may say,} Into this world stepped a young Folkstone lad, when, on the last day of May, 1598, he matriculated at Cambridge. Harvey's education may be traced without difficulty, ^{because} ~~as~~ the influences which shaped his studies were those which had for

a century prevailed in the profession of this country. We do not know the reason for selection of Caius College which, so far as I can gather, had no special connection with the Canterbury school. ^{it was chosen because of} Perhaps ~~through~~ ^{else} the advice of the family physician, or of a friend, or of his rector; or his father may have known Caius, or the foundation may already have become famous as a resort for those about to "enter on the physic line." ^{Or} ~~It is~~ quite as likely, as we so often find in our experience, some trivial incident may have turned his thoughts towards medicine. When he came up in 1593 there were ^{those of} middle-aged ~~men~~ who could tell racy stories of ^{Caius} the co-founder of the college, against whose iron rule they had rebelled. "Charged not only with a show of a perverse stomach to the professors of the gospel, but with Atheism" the last days of ^{Caius} a noble life were embittered by strife and misunderstanding. Doubtless the generous souls among them had long since learned to realize the greatness of his character, and were content to leave "the heat of his faith to God's sole judgement and the light of his good works to men's imitation"--with which words half a century later the inimitable Fuller concludes a short sketch of ^{his life} ~~Caius~~. I like to think that, perhaps, one of these very rebels, noting the studious and inquisitive nature of Harvey, had put into the lad's hand the little tractate, De libris propriis, from which to glean a knowledge of the life and works of their great benefactor. The contemplation of such a career could not but inspire with enthusiasm any young man. No one in the profession in England had ^{before that time} ~~ever~~ reached a position ^{which I may describe as} ~~of~~ such European ^{as that of Caius} ~~significance~~. An enthusiastic ^{student} and the friend of all the great scholars of the day; a learned commentator ^{on} of the works of the Fathers; the first English student in clinical medicine; a successful teacher and practitioner; a keen naturalist; a liberal patron of learning and letters, a tender and sympathetic friend,--Johannes Caius is one of the great figures in our history.

...country prevailed in the profession of this country. We do not know the
reason for selection of Calum College which, so far as I can gather, had no
special connection with the Canterbury school. Perhaps, the advice of
the family physician, or of a friend, or of his rectory, or his father may have
been taken, or the foundation may already have become known as a rectory for
these about to enter on the physio line. ...
...find in our experience, some relief treatment may have turned his thoughts
towards medicine. ...
...of the co-founder of the college against whom from time they
had rebelled. "Obeyed not only with a show of a generous respect to the one-
...of the hospital, but with a certain, the last days of a noble life were
...by still and understanding. ...
...had been known to realize the greatness of his character, and was
...to leave "the best of his faith to God's sole judgment and the light of
his good works to man's inspection" - with which words half a century later the
intestible father considered a short sketch of ...
...one of these very rebels, seeing the passion and insatiable nature of
...had put into the father's hand the little treatise, "On libris expositio."
...which to him a knowledge of the life and works of their great benefactor.
...the contemplation of such a career could not but inspire with enthusiasm any
...man. He was in the profession in England and had reached a position ...
...in recognition of the friend of all the great
scholars of the day; a learned commentator on the works of the Fathers; the first
English student in classical medicine; a successful teacher and practitioner; a
most naturalist; a liberal patron of learning and letters; a tender and vigorous
...of the great figures in our history.

It was chosen because

John

John

Calum

Calum

his life

as that of Calum

before that time

in recognition of

which I may describe as

Copy
nor need I dwell, before this audience, on his devotion to our interests, other than to say that the memory of no Fellow on our roll should be more precious to us.
Four years hence, on October the 6th., will occur the quater-centenary of his birth. As well in love as in gratitude, we could celebrate it in no more appropriate manner, ^{and 'gone} ~~or as~~ ^{is} ~~gone~~ that would touch his spirit more closely, than by the issue of a fine edition of his principal works (including the *Ms.* annals of the College). For the preparation of ^{this} ~~which~~ there are those among us well fitted, not less by ~~the~~ ^{the possession of} veneration for his memory than by that critical scholarship which he valued so highly.

When Harvey set out on the grand tour, Italy was still the mater gloriosa studiorum; to which one hundred years earlier, so tradition says, Linacre on leaving had erected an altar. The glamour of the ideals of the Renaissance had faded somewhat since the days when John Free, an Oxford man, had made the ancient learning his own; and had so far bettered the instruction of his masters that he was welcomed as a teacher in Padua, Ferrara and Florence. In a measure, too, the national glory had departed, dimmed amid the strife and warfare which had cost the old republics their independence. Many years earlier Fracastorius, one of our medical poets, had sung of her decadence:-

"To what estate, O wretched Italy,
Has civil strife reduc'd and moulder'd Thee!
Where now are all thy ancient glories hurl'd?
Where is thy boasted Empire of the world?
What nook in Thee from barbarous Rage is freed
And has not seen thy captive children bleed?" (1)

(1) Syphilis. Englished by E. Tate, 1686.

And matters had not improved but had grown worse. Italian influence had sunk deeply into the social ~~and~~ professional and commercial life of England ~~in the sixteenth century~~, more deeply, indeed, than we appreciate⁽¹⁾, and it was not for a generation or two later that the candle-sticks were removed from the cis-Alpine towns to Montpellier, Paris and Leyden. In 1593 a well-to-do young Englishman, who wished to study medicine thoroughly, went to North Italy, and most naturally to Padua--"fair Padua," nursery of the arts,--whose close affiliations with us may be gathered from the fact that of ~~all~~ universities next to Oxford and Cambridge she has given us more Presidents than any other.

In the years that had passed ^{since} Vesalius had retired in disgust, the fame of its anatomical school had been well maintained by Fallopius, Columbus and Fabricius, worthy successors of the great master. Of each may be said what Douglas says of the first named: in docendo maxime methodicus, in medendo felicissimus, in secundo expertissimus. While the story of ^{Harvey's} ~~his~~ student life can never be told as we ^{wish} ~~could like~~, we know enough to enable us to understand the influences which moulded his career. In Fabricius, ^{he} ~~Harvey~~ found a man to make his life-model. To the enthusiastic teacher and investigator were added those other qualities so attractive to the youthful mind, generous sympathies and a keen sense of the wider responsibilities of his position, as shown in building, at his own expense, a new anatomical theatre for the University. Wide as was the range of his ^{master's} studies, embracing not alone anatomy but medicine and surgery, the contributions by which he is most distinguished are upon subjects in which ^{Harvey himself} ~~he~~ subsequently made an undying reputation. The activity of his literary life did not begin until he had been teaching nearly forty years, and it is a fact of the highest significance that,

(1) see Italian Renaissance in England, Enstein, MacMillan & Co., 1902.

corresponding to the very period of Harvey's stay in Padua, ~~he~~ must have been deep in the study of Embryology and ~~at work in~~ the anatomy of the vascular system. His great work on generation was the model on which Harvey based his own, in some ways, more accurate ^{- studies} studies, in which, as my colleague, Professor Brooks of the Johns Hopkins University has pointed out, he has forestalled von Baer ~~in the views on~~

^{really} But the work of Fabricius which ~~alone~~ concerns us here is the de Venarum Ostiolis. Others before him had seen and described the valves of the veins-- Carolus one of the great, Stephani; Sylvius and Paul Sarpi ^{But} an abler hand ^{in this work has} ~~this time~~ dealt with the subject; and has left us a monograph which for completeness and for accuracy and beauty of ~~the~~ illustration, has scarcely its equal in anatomical literature. Compare Plate VII, for example, with the ^{same} illustrations of the structures in the Bidloo ^{or the} Cowper Anatomy, published nearly one hundred years later; and we can appreciate the advantages which Harvey must have enjoyed in working with such a master. Indeed, it is not too far-fetched to imagine ^{him} ~~Harvey~~ scalpel in hand, making some of the very dissections from which these wonderful drawings were taken. But here comes in the mystery. How ^{a Fabricius} ~~the~~ man who did such work--how a teacher of such wide learning and such remarkable powers of observation, ~~how he~~ could have been so blinded as to overlook the truth which was tumbling out, so to speak, at his feet, is to us incomprehensible. ^{But} But his eyes were sealed; and to him, as to his greater ^{of these great men} predecessors in the chair, clear vision was denied. The dead hand of the great Pergamite lay heavy on all thought; and Des Cartes had not yet changed the beginning of Philosophy from wonder to doubt. Not without a feeling of pity do we read of the hopeless ^{of these great men} struggle to escape from slavish submission to authority. ^{But} But it is not for us in these light days to gauge the depth of the

corresponding to the very period of Harvey's stay in Padua, and must have been
 deep in the study of anatomy and the anatomy of the vascular
 system. His great work on generation was the model on which Harvey based his
 own, in some ways more accurately stated in which, as my colleague, Professor
 Brooke of the Johns Hopkins University has pointed out, he has formulated

and the work of Fabricius which concerns us here is the De Generatione
 Ovis before him had seen and described the veins of the uterus
 certain one of the great, Staphylis; Sylvius and Paul Bartheolin as well as
 in the work of the great, Staphylis; Sylvius and Paul Bartheolin as well as

in the work of the great, Staphylis; Sylvius and Paul Bartheolin as well as
 in the work of the great, Staphylis; Sylvius and Paul Bartheolin as well as
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in the work of the great, Staphylis; Sylvius and Paul Bartheolin as well as

revered
 veneration with which the men of the sixteenth and seventeenth centuries regarded the fathers. Their mental attitude was that expressed in Browning's well-known poem: *Browning*:-

"Those divine men of old time
 Have reached, thou sayest well, each at one point
 The outside verge that rounds our faculty,
 And where they reached who can do more than reach?"

Willing to correct observations or to extend anatomy by careful dissection, it was too much to expect ^{from them either} a new interpretation ~~either~~ of the old facts, or a knowledge of the new method by which ^{those facts} ~~they~~ could be correctly interpreted.

The ingenious explanation which Fabricius gave of the use of the valves ^{of the veins} to serve as dams or checks to the flow of the blood, so that it would not irrigate too

rapidly, and overflow the peripheral vessels to the deprivation of the upper parts of the limbs, shows how the old physiology dominated the most distinguished teacher of the ^{time in the most distinguished school of Europe.} This may have been the very suggestion to his pupil of the more excellent way. ^{Was it} ~~Perhaps it may have been~~ while listening to this ingenious

explanation of his master that, in a moment of abstraction, dimly dreaming, perhaps, of ^{an} ~~his~~ English home ~~so~~ far away and ~~a~~ long forsaken, ~~that~~ there came to Harvey ^a ~~the~~ heaven-sent moment, ^a ~~the~~ sudden inspiration, ^{a passing} ~~the~~ little doubt, nursed for ~~so~~ long in silence ~~and~~ which ultimately ^{grew into} ~~became~~ the great truth of 1616?

[The works of Vesalius, of Fallopius and of Fabricius effected a revolution in Anatomy, but there was not at the close of the sixteenth century a new Physiology. Though he had lost an anatomical throne, Galen ruled absolutely in all conceptions of the functions of the body; and in no department more serenely than in that relating to the heart, ^{to} ~~the~~ the blood and its movements. Upon his views, I need not dwell further than to remind you that he regarded the liver as the

source of the blood; of which there were two kinds, the one in the veins, the other in the arteries; both in ceaseless ebb and flow, the only communication between these closed systems being through pores in the ventricular septum.

He knew the lesser circulation, but thought it only for the nutrition of the lungs. The heart was a lamp which is furnished with oil by the blood and air from the lungs. Practically until the middle of the seventeenth century,

Galen's physiology ruled the schools; and yet for years the profession had been in latent possession of a knowledge of the circulation. Indeed, a good case has been made out for Hippocrates ^{in whose works occur some} remarkably suggestive sentences. (see Willis' Harvey, p. 21 and 22)

In the sixteenth century the lesser circulation was described with admirable fulness by Servetus and by Columbus; and both Sarpi and Caesalpinus had Hippocratic glimmerings of the greater circulation; and these men, with others doubtless, were in latent possession of the truth. But

every one of them saw darkly through Galenical glasses, and theirs was the hard but the common lot never to reach such conscious possession as to make men ^{everywhere} acquiesce ~~in the truth~~. One must have the disinterestedness of the dead

to deal with a problem about which controversy has raged and in which national issues have been allowed to blur the brightness of an image clear as day to those ^{which would be} those with eyes to see. Nor would I refer to a matter long since ~~adjudged~~

settled by those best competent to judge, had not the well-known work of Luciani, the distinguished Professor of Physiology at Rome, appeared ^{recently} in German dress, edited by Professor Verworm, and ~~has thus~~ spread broadcast views to which, with

a chauvinism unworthy of their history, our Italian brethren still adhere. It has been well said "that he alone discovers who proves." ^{and in the matter of the circulation of the blood,} This was reserved

for the ~~young~~ pupil of Fabricius with whom, ^{next meet him} Skipping many arduous years, we ~~may~~ return and accompany him as Lumleian Lecturer to the College.

source of the blood; of which there are two kinds, the one in the veins, the
other in the arteries; both in circulation, and flow, the only communication
between these closed systems being through pores in the venous system.
He knew the former circulation, but thought it only for the nutrition of the
body. The heart was a lamp which he furnished with oil by the blood and air
from the lungs. Practically until the middle of the seventeenth century
Calvin's physiology ruled the schools; and yet for years the profession had been
in latent possession of a knowledge of the circulation. Indeed, a good deal
had been said and for Hippocrates and Aristotle's sentences. (See
in what occurs below)
Willis, Harvey, and others. In the sixteenth century the former circulation
was described with scientific fulness by Harvey and by Columbus; and both
and Casselagnac had Hippocratic elements of the former circulation, and
these men, with others besides, were in latent possession of the truth. But
every one of them was darkly blinded by Aristotle's theory, and neither the
fact the reason for never to reach the scientific possession of the truth.
The reason for this was the Aristotelianism of the age.
He had with a problem about which nothing was said, and he was
known have been allowed to pierce the brightness of an Aristotelianism.
He was with eyes to see. For would I refer to a matter long since
settled by those best competent to judge, but not the well-known work of Linnæus
the distinguished Professor of Physiology at Bonn, appeared in German, Greek,
edited by Professor Verworn and ————
a chemist university of their history, and Linnæus's theory still stands.
It has been well said "that in these difficulties who progress." This was answered
for the same part of Linnæus's work, and Linnæus's many answers years, we
know the reason for an Aristotelianism in the College.

SKP all

15.

III. G.T.

The really notable years in the annals of medicine are not very numerous. We have a calendar filled with glorious names, ~~but our eschatology has not been systematically cultivated;~~ ^{but} and among the saints of science, if we know an era it is as much as can be expected--perhaps because such men are less identified with achievements than representative of the times in which they lived. With many of our greatest names we cannot associate any fixed dates. The Grecians who made Hippocrates possible, live in memory with some theory, or a small point in anatomy, or in regard to the place of their birth; while the 'floruit' can not always be fixed with accuracy.

Hippocrates himself, Erisistutus, Galen, and Araetius have no days in our calendar. We keep no festival in their honour as the churches do those of St. Jerome and St. Chrysostom. It is not until after the Renaissance that certain years (anni mirables) stand out in bold relief as connected with memorable discoveries, or with the publication of revolutionary works. Nevertheless, only a few in each century; even the sixteenth, so rich in discoveries, has not more than five or six such years, and not one of them is connected with work done in this country. As to the seventeenth century it is hard to name four made memorable by the announcement of great discoveries or the publication of famous works; in the eighteenth century not three, while in the century just completed, though it is replete with extraordinary discoveries, one is hard pressed to name half a dozen years which flash into memory as made ever memorable by great achievements. Of the three most important, anaesthesia, sanitation and antiseptic surgery, only of the first can the date be fixed, 1846, and that for its practical application. For the other two discoveries, who will settle upon the year in which the greatest advance was made, or one which could be selected for an anniversary in our calendar?

THE

The really notable years in the annals of medicine are not very numerous. We have a calendar filled with famous names, but our chronology has not been systematically collected. And even the annals of science, if we know as we do, it is as much as can be expected—perhaps because such men are less identified with achievement than representative of the class in which they lived. With any of our greatest names we cannot associate any fixed dates. The Greeks who made hypotheses possible, live in memory with some theory, or a small point in anatomy, or in regard to the place of their birth; while the 'literate' can not always be fixed with accuracy.

Physicians himself, Aristotle, Galen, and Avicenna have no date in our calendar. We keep no festival in their honor as the Chinese do those of Sh. Tang and Sh. Ching-choo. It is not until after the Renaissance that certain (and almost all) names are held in honor as connected with medicine. Theories, or with the publication of revolutionary works. Nevertheless, only a few in each century; even the sixteenth, so rich in discoveries, has not more than five or six such years, and not one of these is connected with your time.

As to the seventeenth century it is hard to name four men responsible by the announcement of great discoveries or the publication of famous works; in the eighteenth century not three, while in the nineteenth just completed though it is replete with extraordinary discoveries, we are hard pressed to name half a dozen years which flash into memory as particularly remarkable or great achievements. Of these most important, especially, anatomy and physiology, only of the first and the last, 1858, and that for the special application. For the other two discoveries, who will call to mind the year in which the greatest advance was made, or on which could be relied for an anniversary in our calendar?

There is one dies mirabilis in the history of this college, in the history, indeed, of the medical profession of this country, and the circumstances which made it memorable are well known to us. At ten o'clock on a bright spring morning, April 17th., 1616, an unusually large company was attracted to the New Anatomical Theatre of the Physicians' College, Amen Street. The second Lumleian lecture of the annual course, given ~~that~~ ^{also} year by a new man, had drawn a larger gathering than usual, due in part to the brilliancy of the demonstration on the previous day, but it may be ~~that~~ ^{because} rumours had spread abroad about strange views to be propounded by the lecturer. I do not know if at the College the same stringent rules as to compulsory attendance prevailed ^{as} at the Barber Surgeon's Hall. Doubtless not; but the President, and Censors, and Fellows would be there in due array; and with the help of the picture of The Anatomy lecture by Bannister, which is in the Hunterian collection, Glasgow, and a photograph of which Dr. Payne has recently put in our library, we can bring to mind this memorable occasion. ^{We see} The 'Anatomy', one of the six annually handed over to the College, on the table; the prosector standing by the skeleton near at hand; and very probably on the wall the very Tabulae of dissection of the arteries, veins, and nerves that hang above us to-day. But the centre of attention ^{is} the lecturer, a small dark man, wand in hand, with black piercing eyes, a quick vivacious manner, and ^{with} an ease and grace in demonstrating, ^{which bespeaks} ~~that bespeaks~~ the mastery of a subject studied for twenty years with a devotion that we can ^{describe} ~~specify~~ as Hunterian. A Fellow of nine years' standing, there was still the salt of youth in William Harvey when, not, as we may suppose, without some trepidation, he faced his auditors on this second day, a not uncritical audience, ^{including} ~~containing~~ many men well versed in the knowledge of the ~~day~~ ^{time} and many who had heard all the best lecturers of Europe.

There is one Miss Mable in the history of this college, in the history
of the medical profession of this country, and the circumstances which
made it memorable are well known to us. At ten o'clock on a bright spring
morning, April 17th, 1875, an unusually large company was attracted to the
Anatomical Theatre of the Physicians College, Lane Street. The speaker
was Professor of the animal course, given that year by a new man, had drawn a
large gathering than usual, and in part to the brilliancy of the demonstration
on the previous day, but he may be assured that he had great credit about strange
views to be propounded by the lecturer. I do not know if at the College the
same arrangement was as to company assembled provided at the Barber
College's Hall. Doubtless not, but the President, and Secretary, and fellow
students were there in the evening and with the aid of the picture of the lecturer
by Bannister, which is in the museum collection, Gleaner, and a plan-
tiff at which Dr. Paine has recently put in our library, we tried to find
this memorable occasion. The lecture, one of the six annually held over to
the College, on the evening of the 17th, was preceded standing by the speaker near at hand,
and very probably on the wall the very Table of dissection of the cat,
value and nerves that hand above us to-day. For the centre of attention — the
lecturer, a small dark man, bald in front, with black pointed eyes, a calm
visionary manner, and an air of gravity in his bearing, which was the
evidence of a subject studied for nearly years with a devotion that we can
as remember. A fellow of fine poetic sensibility, there was still the same of
young in William Harvey then, not, as we say supposed, without some preparation he
faced his audience on this second day — a not unimportant matter, including
and was well versed in the knowledge of the cat and many who had heard all the
best lectures of Europe.

Let
 The President, Henry Atkins, after whose name in our Register stands the mysterious word, 'Corb' had already had his full share of official lectures, less burdensome three hundred years ago than now. Let us hope the lecture of the previous day had whetted his somewhat jaded appetite. The Censors of the year formed an interesting group, John Argent, a Cambridge man, a "great prop of the college," and often President, of whom but little seems known; Richard Palmer, also of Cambridge, and remembered now only for his connection with Prince Henry's typhoid fever, as Dr. Norman More has told us; Mathew Gwinne of Oxford, first Professor of Physic at Gresham College and a playwright of some note in his day; and Theodore Goulston of Merton College, one of our great benefactors, and for ~~these~~ *past and gone* two hundred and sixty seven years ^{purveyor-in-chief} of reputation to the younger Fellows of the College. Mayerne would be

there, not yet a Fellow, but happy in his escape from the Paris Faculty ~~but~~ *still with* ~~with the dust of conflict still upon him~~ he would scent the battle afar in the revolutionary statements which he heard. Meverell, fresh from incorporation at Cambridge, also not yet a Fellow; Moundeford, often President, whose little book, 'Vir Bonus' sets forth his life. Paddy, a noteworthy benefactor, a keen student, still gratefully remembered ~~at his old college, St. John's at Oxford,~~ would have strolled in with his old friend Gwinne, Baldwin Hamey the elder, *would be there he had brought* also a benefactor, and, perhaps his more interesting son, then preparing to enter Leyden, whose memory should be ever green among us. *Let us hope* Thomas Winston, probably an old fellow-student at Padua, and ~~recently~~ *later* appointed Professor of Physic at Gresham College, *was absent* ~~may not have been there~~ *not* ~~let us hope he never~~ attended the Lullian lecture, as we can then be more charitable towards the sins of omission in his work on Anatomy, published after his death, which, so

The president, Henry Atkins, after a short time in our hall, stands the
auditorium full, 'Gosh' has already had his full share of official business,
and has been three hundred years and then more. But we hope the future of
the previous day has added his somewhat faded reputation. The success of the
year formed an interesting group, John Atkins, a Cambridge man, a great group
of the college, and after President, at whom the little seems known; Richard
Atkins, also of Cambridge, and remembered now only for his connection with
John Henry's 'Gosh' fever, as Mr. Atkins here has told us; Richard Atkins of
Cambridge, first professor of Physics at Groton College and a physicist of some
note in his day; and Theodore Atkins of Groton College, one of our great
physicists, and for some time the head of the physics department at
Cambridge. The further history of the college, Atkins would be
known, not yet a fellow, but happy in his career from the Paris Physics
with the head of the physics department at Cambridge, Atkins also in the
physicist's department which he held; however, from his connection at
Cambridge, also not yet a fellow; however, from his connection at
Cambridge, 'Gosh' Atkins, a fellow, a noteworthy physicist, a man
of note, still happily remembered as a physicist, Atkins of Groton,
could have recalled in his time all these Atkins, Atkins Atkins Atkins
also a physicist, and perhaps the most interesting one, then appearing as
John Atkins, whose memory should be ever known and remembered.
probably an old fellow-student of Groton, and Atkins Atkins Atkins
Physics at Groton College, Atkins Atkins Atkins Atkins Atkins Atkins
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far as I can read, contrary to the statement of Munk (Roll of the College) contains no word of the new doctrine. As an old Paduan and fresh from its anatomical school, the younger Craigi would not be absent. Fludd, the Rosacruzian, ^{of course} ~~was~~ ^{was} present; attracted, perhaps, by rumours of anti-Galenical doctrines which had served to keep him out of the college--nor would he be likely to be absent at the festival of one whom he calls his 'physicall and theosophicall patron.' And certainly on such an occasion that able Aberdonian, Alexander Reid, whose ^{would be there} ~~Σωπρωτογρ~~ ^{αφία} had just appeared (1616,) ^{copy in Bodleian} ~~copy in~~ with an extraordinarily full account of the vascular system. ^{Readings} ~~an~~ ^{one of our most distinguished Medico-surgical Fellows} ~~able anatomist, a distinguished surgeon, a Fellow of the College and a liberal benefactor,~~ ^{of} ~~as~~ ^{as} has been stated, he was not a convert on account of his age, it was on account of his youth, for the Harveian doctrine ^{in meagre form} is to be found in the later editions ^(1516/1600) ~~(1600)~~ of his Manual. But we would miss Lodge, the poet, "cried up to the last for physic," as he had recently started for the continent. And we may be sure that Harvey's old fellow-students at Padua, Fortescue, Fox, Willoughby, Mounsell and Darcy would be ~~there, anxious to do honour to their old friend and colleague,~~ ^{with their presence.} And Edward Lister, also a fellow-Paduan, the first of his name in a family which has given ^{three other members} ~~two distinguished and one immortal~~ ^{two distinguished and one immortal} to our profession. It was not a large gathering, as the fellows, ^{the lecturers} ~~members,~~ Licentials and candidates numbered only about forty; but as it was a great event in the community, there would be present many interested and intelligent laymen, of the type of Digby and Ashmole and Pepys--the 'curious' as they were called, for whom throughout the seventeenth century the Anatomy lecture equalled in attraction the play. Delivered in Latin, and interspersed here and there with English words and illustrations, there were probably more ^{who saw} ~~spectators~~ than ^{who comprehended} ~~auditors~~; as Sir Thomas Browne ^{indicated to} ~~promised~~ his son Edward when he lectured at

Chirurgeons Hall.

It is ^{perhaps} ~~one of the happiest~~ ^{a fortunate} and almost unique, circumstance in bibliography that the manuscript of this course of lectures should have been preserved; and that we should be able to follow step by step the demonstration--a long and formidable procedure, as the whole anatomy of the thoracic organs was discussed but I daresay there was a prolonged break between the morning and the afternoon lecture 'for a fine dinner' as Pepys described, when ¹⁶⁶³ On February 27th., 1663, he went with Harvey's pupil, Scarborough, to Chirurgeons' Hall and was used with 'extraordinary great respect.' Towards the close, after discussing ^{in novel & modern terms} fully the structure and action of the heart, Harvey summed up in a few sentences the conclusion of the matter. They stand as follows in the Prolectiones,

(published by the College in 1886:-)

W.H. constat per fabricam cordis sanguinem

per pulmones in Aortam perpetuo

transferri, as by two clacks of a

water bellows to rayse water

constat per ligaturam transitum sanguinis

ab arteriis ad venas

unde ^Wperpetuum sanguinis motum

in circulo fieri pulsu cordis.

Probably few in the lecture hall appreciated the full meaning of these words, which to some must have seemed a blot on the whole performance; while others, perhaps, all with the feelings of the fishes after St. Anthony's well known sermon,

"Much delighted were they

But preferred the old way,"

University Hall.

Handwritten signature

It is a... and almost unique, circumstance in bibliography

that the manuscript of this course of lectures should have been preserved; and that we should be able to follow step by step the development--a long and

terrible procedure, as the whole anatomy of the thoracic organs was discussed and I cannot there was a prolonged break between the morning and the afternoon

noon lecture 'For a time longer' as I have described, when on February 27th,

1883, he went with Harvey's body, 800000000, to the University Hall and was

and with 'extraordinary great respect' towards the class, after discussing

the structure and action of the heart, Harvey seemed up to a few minutes

the conclusion of the lecture. They stand as follows in the English edition.

Published by the College in 1885.

E. A. Corson, for the University of London

and published in London by the

University, as the course of a

water balance in water

connected with the structure and function

and structure of the

with Harvey's body

in the body of the

probably too in the lecture hall appeared the full meaning of their work.

even to some extent have seemed a kind of the whole performance; while others

perhaps, all with the feeling of the lecture given at the University of London

perhaps.

These lectures were given
and published in the

returned to their homes wondering what he would say on the morrow when the "divine banquet of the brain" was to be spread before them.

One thing was certain--the lecture gave evidence of a skilled anatomist of remarkably wide experience and well versed in ~~the~~ literature from Aristotle to Fabricius. While Harvey could ^{agree} ~~say~~ with John Hunter ^{who states} in a ~~Ms.~~ introductory lecture in ^{The College} ~~our~~ library--"I deliver nothing I have not seen and observed myself," he could not add with him, "I am not a reader of books." Nearly one hundred references to some twenty authors occur in the manuscript of the thorax, or, as he calls it, the "parlour" lecture.

It is a great pity that we have no contemporary account of the impression ^{On such men} made by the new doctrines ~~made on such a man, for example,~~ as Mayer ^{Reid} or Reid. ^{Which} we have the author's statement that they were taught annually and elaborated.

So far as I know there is no reference to show that the lectures had any immediate influence in the profession, or indeed that the subject-matter ever got beyond the circle of the college. We are not without a first-hand account by the author of his reception: "These views as usual pleased some more, others less; some chid and calumniated me, and laid it to me as a crime that I had dared to depart from the precepts and opinions of all anatomists; others desired further explanation of the novelties."

It is difficult for us to realize the mental attitude of the men who listened year by year as the turn of the "Parlour Lecture" came. Their opinions, no less firmly held than is our positive knowledge, did not get much beyond:--"The great dictator Hippocrates, puts us in mind of it, Galen has a thousand times inculcated the same, the prince of the Arabian tribe, Avicen, has set his seal unto it." This expresses their mental state, and such a heresy as a general circulation

returned to their homes...
relative balance of the brain" was to be spread before them.
One thing was certain--the lecturer gave evidence of a shrewd anticipation of
...with experience and well known in the literature of the
...with John Hunter in a way...
lecturer in my library--"I deliver nothing I have not seen and observed myself."
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...the "parlor" lecture.
It is a great pity that the lecturer's account of the...
...the new theories...
...the author's statement that they were taught knowledge and...
...I know there is no reference to them and the lecturer had any
...influence in the profession, or indeed that the subject matter ever got
...circle of the college. He was not without a first-hand account of
...of the reception: "These views are actual glimpses into some...
...and unimpaired as and left it to me as a matter that I had found
...from the proceeds and opinions of all auditors; others looked
...of the novelties."
It is difficult for me to realize the mental attitude of the men who listened
...of the "parlor" lecture...
...in our positive knowledge, and not for each before...
...of it. Other than a...
...of the...
...of the...
...of the...

could scarcely be appreciated; and in a man of such good parts as Harvey would in pity be condoned, just as we overlook the mild intellectual vagaries of our friends.

Footless to ask, impossible to answer, is the question why Harvey delayed for twelve years the publication of his views. He seems to have belonged to that interesting type of man, not uncommon in every age, who knows too much to write. It is not a little remarkable that this reticence of learning has been a ^{strong mental} feature in some of the greatest of discoverers. Perhaps it was the motive of Copernicus who so dreaded the prejudices of mankind that for thirty years he is said to have detained in his closet the Treatise of Revolutions. From what Harvey says, very much the same reasons restrained the publication of his work. To the lesser circulation, with the authority of Galen and Columbus to support it, ⁷⁴ men "will give their adhesion;" but the general circulation "is of so novel and unheard-of character that I not only fear injury to myself from the envy of a few, but I tremble lest I have mankind at large for my enemies, so much both wont and custom, that has become as another nature, and doctrine once sown and that hath struck deep root and rested from antiquity, influence all men."

He felt, as he says to Riolan, that it was in some sort criminal to call in question doctrines that had descended through a long succession of ages and carry the authority of the ancients; but he appealed unto nature that bowed to no antiquity and was of still higher authority than the ancients. Men have been in conscious possession for years of some of the greatest of truths before venturing to publish them. Napier spent twenty years developing the theory of Logarithms, and Bacon kept the Novum Organum by him for twelve years, and year by year touched it up, indeed, Rowley states that he saw twelve copies.

Two other ~~most~~ famous discoveries ^{by Englishmen} have the same curious history, the two of

Pearce

Englishmen, which, perhaps, alone can be said to be greater than the demonstration of the circulation of the blood. Zachariah Wood speaks of Harvey as the surmiser of the little world, to distinguish him from another Englishman who first went about the greater world ^{OB} but a greater than both--Isaac Newton--had grasped the secret of a cosmic circulation and brooded in silence over the motion of the spheres, for more than twenty years before publishing the Principia. Between the writing of the rough sketch in 1842, and the appearance of the Origin of Species seventeen years elapsed; and from the date of the journal notes, 1836, in which we have the first intimation of ^{Darwin's} the theory, more than twenty years. In Harvey's case this intellectual reticence, this hesitation "to quit the peaceful haven," as he says, has cost us dear. Only a happy accident gave us the de generatione, and the College can never be too grateful to Sir George Ent for that Christmas visit, 1650, so graphically described and to which we owe one of the masterpieces of English medicine. How many seventeenth-century ^{year} treatises we could have spared, to have had the Practice of Medicine conformable to his Thesis of the circulation of the blood. How instructive his prospect^{ed} ^{he} Medical Observations would have been, we can gather from the remarkable series of cases scattered through the manuscript notes and his published writings. His "treatise apart" on Eventilation or Respiration; the Medical Anatomy, or Anatomy in its Application to Medicine, as he says, "I also intend putting to Press;" the work "from observations in my possession" on Organs of Motion in Animals;--all of these, with the work on Generation in Insects, and others mentioned by Dr. Merrett, the then Library keeper, 1667, ⁽¹⁾ (Munk, Vol. I., p. 132) were probably dispersed when those Sons of Belial ransacked his chambers at Whitehall.

"Still the die is cast, and my trust is in the love of truth and the candour

28.

that inheres in cultivated minds." ^{these} With ~~which~~ words he consoles himself, knowing from ~~the~~ experience ~~with his friends at the College~~ that the publication of even a portion of the work, as ~~he~~ calls the little book in one place, would raise a tempest. Zachariah Wood in the preface to the English Edition, 1673, expresses what many of his contemporaries must have felt--"Truly a bold man indeed, O disturber of the quiet of Physicians! O seditious citizen of the Physical Commonwealth! who first of all durst oppose an opinion conformed for so many ages by the consent of all." De Bach of Amsterdam describes the dilemma in which teachers found themselves--"This new thing I did examine, which the first entrance did seem very easily to be refuted, but being weighed in a just balance and having added to reason my own ey-sight it was found inexpugnable, nay (the very prick of truth enforcing) to be embraced with both arms. What should I do? Must Hippocrates be left, Galen slighted? No, if we follow the truth sensed with reason and our sense, we are still Hippocrates his, we are still Galens." (English Edition, 1653)

The history of the next thirty years ^{illustrates} the truth of Locke's dictum, and the struggle ^{for} acceptance ^{ON} not the least interesting part of the story ^{it} should be told at greater length, and with more detail than it has yet received, ^{more} or than I am able to give it. That the repeated demonstrations, aided by the strong personal influence of the man, brought the college, as a body, to the new views, is witnessed rather by the esteem and affection the Fellows bore to him than by any direct evidence. The appearance of the book in 1628 made no great stir; it was not a literary sensation; a not uncommon fate of epoch-making works, the authors of which are too far ahead of their contemporaries to be appreciated. The same event happened to Newton's Principia—as Sir William Petty remarks,

"I have not met with one man that put an extraordinary value on the book."

Among Englishmen, Primrose alone, brought up among the strictest sect of the Galenists, and at the time not a Fellow, wrote a criticism ^{from} ~~from~~ the old standpoint, (1632) and remained unconvinced twelve years later, as his controversy with Regius shows. And only one special treatise in favour of the circulation was written in England--that of Sir George Ent, a pupil and friend of Harvey, who wrote (1641) specially against Parisanus, a Venetian, a foeman quite unworthy of his quill. In the Universities the new doctrine rapidly gained acceptance--in Cambridge through the influence of Glisson, while in part to Harvey's work and influence may be attributed that only too brief but golden renaissance of science at Oxford. A little incident mentioned in the autobiographical notes of the celebrated Wallis shows how the subject was taken up quite early in the Universities:--"And I took into it the speculative part of physick and anatomy as parts of natural philosophy, and, as Dr. Glisson has since told me, I was the first of his sons who (in a public disputation) maintained the circulation of the blood, which was then a new doctrine, though I had no design of practising physick." This was in the early "thirties." But the older views were very hard to displace, and we find such intelligent members of the "invisible college" as Boyle and Petty (as late as 1651, carrying out together in Ireland experiments to satisfy themselves ^{as to} the truth of the circulation of the blood. It took much longer for the new views to reach the text-books of the day

From no work of the period does one get a better idea of the current anatomical and physiological teaching in London than from Crooke's Body of Man. (1615 and 1631). Collected out of Vesalius, Plantinus, Platerius, Laurentius, Valveratus, Bauchinus and others, it is (an epitome of their opinions, with the comments of the Professor who read the Anatomy lecture to the company of the Barber surgeons. In the preface to the first edition he speaks of the contentment

Among Englishmen, Emerson alone, I think, was not a student of the
classical, and at the time not a fellow, wrote a criticism of the old stand-
ards (1832) and remained unconverted twelve years later, as his controversy
with Rogers shows. And only one special treatise in favour of the classical
was written in England--that of Sir George Eliot, a poet and friend of Carlyle,
who wrote (1841) especially against Hartmann, a Venetian, a French critic and
copyist of his skill. In the University the new doctrine rapidly gained
recognition--in Cambridge through the influence of Alison, while in part by
Carlyle's work and influence may be ascribed that only too brief but noble
advancement of science at Oxford. A little incident mentioned in the an-
thropological notes of the celebrated writer shows how the subject was taken up
quite early in the University:--"And I took into the speculative part of
myself and myself as a matter of natural philosophy, and as Dr. Johnson and Alison
told me, I was the first of his time who (in a public discussion) maintained the
advancement of the mind, which was then a new doctrine, though I had no doubt
of 'evolutionary physics.' This was the early 'evolution.' But for other views
were very hard to displace, and we first took intelligent notice of the
'evolutionary collapse' as Huxley and Patten in 1841, carried out together in
England experimentally to satisfy themselves of the truth of the classification of the
mind. It took much longer for the new view to reach the heart-roots of the day.
From no work of the period does one get a better idea of the current scientific
and philosophical teaching in London than from Crookes's Body of Man (1851) and
1841. Collected out of Venetian, Platonic, Aristotelian, Ptolemaic, Aristotelian,
Aristotelian and others, it is an epitome of their opinions, with the comment of
the Professor who read the English lecture in the company of the Father
superior. In the preface to the first edition he speaks of the antiquity

Had
 and profit he had received from Dr. Davies' Lumleian lectures at the College of Physicians. There is no indication in the second edition that he had benefited by the instruction of Dr. Davies' successor. Galen is followed implicitly, with here and there minor deviations. The views of Columbus on the lesser circulation are mentioned only to be dismissed as superfluous and erroneous. The Gresham Professor of the day, Dr. Winston, makes no mention of the new doctrine in his Anatomy lectures which were published after his death, ~~in~~ 1651, and are of special interest as showing that ~~even~~ ^{at} ^{a date} so late, a work could be issued with the Galenical physiology unchanged. In Alexander Reid's Manual, the popular textbook of the day, the Harveian views are ~~fully given in the later editions (8th.)~~ ^{in part in the 5th edition} of 1658, in which, as he says in the preface, "the book of the breast" is altogether new--an item of no little interest, since he was a man advanced in years and, as he says, "the hour glass hasteneth and but a few sands remain unrun." Highmore, the distinguished Dorsetshire anatomist, and a pupil of Harvey, in his well-known Anatomy published in 1651, gives the ablest exposition of his master's views that had appeared in any systematic work of the period, and he urges his readers to study the de Motu Cordis as "fontum ipsum" from which to get clearer knowledge. He quotes an appropriate motto for the period--laudamus veteres: sed nostris utimur annis. But even so late as 1671 the old views were maintained in the English edition of Riolan. And yet the knowledge of Harvey's views must have spread broadcast, not only in the profession, but in that large outside circle of distinguished men who felt the new spirit of science working in their veins. From converse or from the Lumleian lectures, which no doubt he often attended, Kenelm Digby must have had the information about Harvey's views on generation, as at the date of the issue of his Two Treatises, 1644,

Handwritten notes:
Lund

and profits he had received from Dr. Davison's translation lectures at the College of Physicians. There is no reflection in the second edition that he had benefited by the translation of Dr. Davison's manuscript. Since he followed implicitly, with care and there alone Davison's. The views of Colman on the human element were not mentioned only to be dismissed as superficial and erroneous. The Professor of the day, Dr. Winton, makes no mention of the new doctrine in his Anatomy lectures which were published after his death in 1881, and one of special interest as showing that even so late a work could be treated with the biological philosophy suggested. In Alexander Hall's Manual, the popular text-book of the day, the Norwegian views are still given in the latest edition (1881) of 1888, in which, as he says in the preface, "the book of the present" is altogether new--an issue of no little importance since he was a man advanced in years and, as he says, "the more these changes and the more rapid progress of knowledge, the distinguished Norwegian anatomist, and a pupil of Harvey, in his well-known Anatomy published in 1851. Given the extent of the expansion of his knowledge, it is not surprising that he suggested in any systematic work of the period, and he notes his reasons for studying the de motu cordis as "familiar topics" from which to draw material. He quotes an appropriate motto for the period--anatomia veteris and anatomia novae. But even so late as 1881 the old views were maintained in the English edition of Harvey. And yet the knowledge of Harvey's views must have spread broadcast, not only in the profession, but in the large outside circle of distinguished men who take the new spirit of science working in their veins. From converse or from the English lectures, which no doubt is often attended, Harvey might have had the information about Harvey's views on generation, as at the date of the issue of the two translations, 1881.

Text
 they had not been published anywhere. *While he knew* ~~Knowing~~ well the motion of the blood as expounded by Harvey, ~~having~~ ^{his} in making ~~the~~ great antidote, studied the action of the viper's heart, ~~xxx~~ Digby, like Des Cartes, could not emancipate himself from the old views, as shown in the following passage:—"But if you desire to follow the blood all along every steppe, in its progresse from the hart round about the body, till it returne back againe to its center, Doctor Harvey who most acutely teacheth this doctrine, must be your guide. He will show you how it issueth from the hart by the arteries; from whence it goeth on warming the flesh, untill it arrive to some of the extremities of the body: and by then it is grown so coole (by long absence from the fountaine of its heate; and by evaporating its owne stocke of spirits, without any new supply) that it hath need of being warmed anew; it findeth itself returned backe againe to the heart, and is there heated againe, which returne is made by the veines, as its going forwardes, is performed only by the arteries."

of the time
 Sir William Temple well expresses the attitude of mind of the intellectual Philistine who looked for immediate results. Speaking of the work of Harvey and of Copernicus he says, "Whether either of these be modern discoveries or derived from old foundations, is disputed; nay, it is so too, whether they are true or no; for though reason may seem to favour them more than the contrary opinions, yet sense can hardly allow them, and to satisfy mankind both these must concur. But if they are true, yet these two great discoveries have made no change in the conclusions of Astronomy nor in the practice of Physic, and so have been but little use to the world, though, perhaps, of much honour to the authors." (Works, 1814, Vol. III., p. 293). It is pleasant to notice that our old friend, Sir Thomas Browne, with his love of paradox, declared that he preferred the ~~discovery of the~~ circulation of the blood to the discovery of America

they had not been published separately, knowing well the nature of the blood
as expounded by Harvey, having, in reading the great author, studied the
action of the vessel's heart, the blood, the blood, could not understand
himself from the old views, as shown in the following passage:--"But if you
desire to follow the blood all along every vessel, in its progress from the
heart round about the body, till it returns back again to the heart, Doctor
Harvey who most ably teaches this doctrine, must be your guide. He will
show you how it issues from the heart by the arteries; from whence it flows
on towards the flesh, until it arrives to some of the extremities of the body;
and as then it is known as completely lost whence does the foundation of life
depend; and by evaporating the own essence of spirits, without any new supply
that it hath need of being renewed again; it finds itself renewed back
again to the heart, and so there is a continual motion, which returns in such by the
veins, as the being forward, is performed only by the arteries."

Dr. William Keble well expressed the attitude of mind of the revolutionaries
of the time who looked for scientific results. Speaking of the work of Harvey
and of Copernicus he says, "Whether either of these be modern discoveries or
derived from old foundations, is altogether immaterial; nay, it is as good, whether they are
true or not; for though reason may seem to favour them more than the contrary
opinion, yet reason can hardly allow them, and so naturally rejected both when
first conceived. But if they are true, yet these two great discoveries have made
no change in the conclusion of antiquity nor in the practice of physics, and
to have been but little use in the world, science, perhaps, of such nature as
the authors." (Works, 1814, Vol. III., p. 293). It is pleasant to notice that
our old friend, Sir Thomas Brown, with his love of paradox, declared that he
preferred the ~~ancient~~ circulation of the blood to the discovery of

Quæstio

America.

Of the reception in Holland and Germany of Harvey's views there is nothing to be added to the admirable account given by Willis. The early and strenuous advocacy of Des Cartes must have influenced the Dutch physicians; but in this, as in so many other things, the infection of his early years proved too powerful, and he could not get rid of the ancient spirits." Of the discovery of the circulation he says (Cousins' Edition, Vol. IX, p. 159) it is "la plus belle et la plus utile que l'on pût faire en médecine." "Toute a faite contraire au sein touchant la mouvement du coeur," which he held to be due to an ebullition of the spirits, a sort of ferment (espece de levain) existing in it. Much more actively discussed in Holland than elsewhere, the writings of Drake, Walaeus, Regius, Plempius, Sylvius, de Bach, Conringius, ^TBartholini (the Dane) and others thrashed out the whole question very thoroughly, and their views with those of Hoffman, Stegel and others are referred to by Willis and given in greater detail by Riolan. (Opuscula Anatomica, London, 1649).

In the oft quoted statement that Harvey, "conquering envy" hath established a new doctrine in his lifetime, Hobbes was right so far as England and Holland are concerned, but it was far otherwise in France, where it met with a bitter and protracted hostility. The Medical School of the University of Paris, at the time one of the best organized and most important in Europe, declined to accept the circulation of the blood during his life time and for some years after his death. The history of the period is pictured for us in vivid colours in that journal intime, which Gui Patin kept up with his friends, Spohn and ^LFalconet of Lyons and the Belins (père et fils). With all his faults, particularly his scandalous lack of charity, one cannot but feel the keenest sympathy with this dear old man. Devoted to his saints, Hippocrates and Galen, Fernel and Duret and to his teachers

A. J.

Piètre and Riolan, to him the circulation of the blood was never more than an ingenious paradox. To such a lover of books and of good literature everything can be forgiven; and in his letters we follow with deepest interest his vigorous campaign against his dear enemies the Cuisiniers Arabesques who had enslaved people and physicians alike, the haemophobics, the chemists, the astrologers and the stibiate, or as he calls it, the Stygiate group. To him the Koran was less dangerous than the works of Paracelsus, the appearance of the new Geneva edition of which he deeply deplores. Reverence for Galen and friendship with Riolan rather than any deep interest in the question inspired his opposition to Harvey. To him the new doctrine was ridiculous, and it was he who called the partisans of it circulateurs in allusion to the Latin word, circulator, meaning charlatan. In 1652 he writes to Spohn that the question is still open whether the blood passes through the septum of the heart or through the lungs. In 1659 he promises to send him a work of Vinean against the circulation. (1) More extraordinary still is the fact that as late as 1670, twelve years after Harvey's death, the Thesis of one Cordelle, a bachelor of medicine, publicly discussed the circulation of the blood; and Gui Patin, who presided, decided in the negative. The fiction of an ingenious narrator, le doux songe of Harvey, are the terms in which he speaks of it. The whole passage is worth quoting as possibly the last public denouncement of what seemed a rank heresy to the old Galenists: "Supposer que le sang se meut toujours ciculairement, que de la veine cava ascendant il tombe dans l'oreillete droite du coeur, que de là il aille traverser toute la substance de poumon pour retomber de là dans l'oreillete gauche en passant par la veine pulmonaire, et au'enfin de là il soit projete dans l'aorte et toutes les artères

(1) Lettres, Vol. I. P. 324, Edition, 1694.)

A. 5.

...and Kiefer, to him the observation of the blind was never more than an
 ingenious paradox. To such a lover of books and of good literature everything
 can be forgiven; and in his letters we follow with deepest interest the widening
 circle against his back against the Christian literature who had unlearned people
 and physicians alike, the haemophiliacs, the chemists, the astrologers and the
 ... or as he calls it, the Sybil's Book. To him the Roman was lost
 ... the appearance of the new Geneva edition
 of which he had only hesitated. Government for Saint and friendship with Kiefer
 rather than any deep interest in the question involved his association in Harvey.
 to him the new doctrine was ridiculous, and it was he who called the physicians of
 it ridiculous in relation to the Latin word, *circulator*, meaning *circulator*.
 In 1852 he writes to Bucher that the question is still open whether the blood
 moves through the system of the heart or through the lungs. In 1859 he writes
 to Bucher a work of mine which is a criticism. (1) Now, especially, my will
 is the fact that as late as 1870, twelve years after Harvey's death, the French
 of one Corbelle, a physician of medicine, publicly attacked the circulation of
 the blood; and that Paris who presented himself in the lecture. The question of
 an indestructible material, in four books of Harvey, are the terms in which he speaks
 of it. The whole passage is worth reading as generally the last public
 demonstration of what seemed a rank theory to the old Galenists: "Bucherer and I
 sent us some serious criticisms, and as it were gave ourselves in hand
 and I published books in 1860, one in 1861 and the other in 1862
 the course of Harvey's life in 1861 I published books on Harvey and Harvey
 ... of Harvey's life in 1861 I published books on Harvey and Harvey

qui le feront passer dans les veines, et dans le coeur, lui faisant par ce moyen suivre un circuit, voilà le doux songe de Harvey, la fiction d'un narrateur ingénieux, mais nullement prouvée par l'évidence. La circulation du sang, son transport circulaire par les vaisseaux, c'est l'enfantement d'un esprit cisif, un vrai nuage qu'embrassent les Ixions pour procréer les Centaurs et les monstres." (9)

For As I said, we can forgive a great deal to the man who has left ^{Such} us a picture of seventeenth century life, drawn, all unconsciously, with a master hand, and through the mists of prejudice and hate we can recognize the good sense which had the courage to protest against the "forfanterie Arabesque et bezoardesque" in much of the therapeutics of the day.

X/60 Though a Professor in the Paris Faculty and a brilliant lecturer, Patin at that time did not occupy such a distinguished position, nor was his opposition of such importance as that of Riolan,—"John Riolan, the Son, the most experienced Physician in the Université of Paris, the Prince of Dissection of Bodies, and the King's professor, and Dean of Anatomie and of the knowledge of simples, chief physician to the Queen mother of Louis XIII"—as he is quaintly, but very truly described, by Harvey. (2) Brought up by his father to regard Hippocrates and Galen as the sources of all wisdom, the intensity of his zeal increased with his years until at last "to see the physic of Galen kept in good repair" became the passion of his life. The deep pity of it all is that such mental blindness should have stricken a really great man, for he was a brilliant anatomist and teacher, the author of the best ^{anatomical} text-book on the subject of its day, a man of affairs, profoundly versed in literature, a successful practitioner, and for years the head of the profession in France.

10 (1) Gui Patin, par Felix Larrieu.

(11) (2) Title page of English Edition of the Letter. 16

The opposition of such a man was serious, and naturally had a profound influence.)

(Not content with the comparatively brief statement in the Encheiridion, 1648; Riolan published in England the following year his Opuscula Anatomica nova, one very large section of which is taken up with the problem of circulation. It was this probably as much as ^a ~~the~~ present of the Encheiridion that induced Harvey to break his long silence ^{to} and reply. After a report of a discussion upon a thesis in 1645 and a statement of objections, a most interesting discussion of the literature follows in which the opinions of various writers are examined, particularly ^{those of} Cartesius, Cohnreigius, Wallaeus and Plemp^{ius}. It is quite possible that the second Disquisition to Riolan, published with the first ^{as a} ~~in~~ ⁱⁿ ~~the~~ ^{form} ~~little~~ duodecimo, at Cambridge, in 1649, was brought out by ^{Riolan's} ~~this~~ latter publication, though it is not directly referred to. Little did Harvey appreciate that his old friend was both blind and deaf, incapable of seeing obvious facts. It was not a question of being conversant with Anatomy or of having had experience, on both of which points Harvey dwells at length. Riolan knew his anatomy ^{than} ~~better~~, ~~or~~ ~~as well as~~ any man of his generation. It was not that he would not ⁽¹⁾ but that he could not ^{the Faculty} see the truth which was staring him in the face. As Reynaud mentions, an occasional thesis (Fagon, 1663, Mattol, 1665) supporting the circulation, did slip through, but the official recognition in France did not come until 1673, when Louis XIV founded a special chair of Anatomy at the Jardin des Plantes for the propagation of the new discoveries.

(2)
The satire of Molière and the Arret burlesque of Boileau completed the discomfiture of the "Anti-circulateurs," but it had taken nearly half a century

(1) Les Médecins au Temps de Molière, 1863.

(2)

to overcome the opposition of those who saw in the new doctrines the complete destruction of the ancient system of medicine.

IV.

stage

Mun

Even when full grown in the conscious^{stage}, Truth may remain sterile without influence or progress on any aspects of human activity. One of the most remarkable phenomena in mental biography is the failure of the Greeks to succeed after giving the world such a glorious start. They had every essential for permanent success:—scientific imagination, keen powers of observation; and, if in the days of Hippocrates the mathematical method of interrogating nature prevailed rather than the experimental, Galen carried the latter to a degree of perfection never again reached until the time of Harvey. Only when placed in its true position in relation to Greek religion and philosophy, as has been done so skillfully by Gomperz,⁽¹⁾ do we realize the immensity of the debt we owe to these "our young light-hearted masters." And Gomperz makes clear the nature of the debt of Greek thought to the practical sense of the physicians. But alas! upon the fires they kindled were poured the dust and ashes of contending philosophies, and neither the men of the Alexandrian school nor the brilliant labours of the most encyclopedic mind that has ever been given to medicine, sufficed to replenish them. Fortunately, here and there amid the embers of the middle ages glowed the coals from which we have lighted the fires of modern progress. The special distinction which divides modern from ancient science is its fruitful application to human needs—not that this was unknown to the Greeks; but the practical recognition of the laws of life and matter has in the past century re-made the world... In making knowledge effective we have

(1) The three volumes of his Greek Thinkers, now in English dress, should be studied by every young man who wishes to get at the foundations of philosophy. The picturesque style of Professor Gomperz, and his strong sympathy with science add greatly to the interest of the work.

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IV.

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variation never again reached until the time of Harvey. Only when placed in
the true position in relation to Greek religion and philosophy, as has been done
in this little book by Gorge, do we realize the lacunae of the Greek as well as

those "our young light-headed masters," and Gorge's book shows the manner of
the debt of Greek thought to the practical sense of the physicians. The aim
when the facts they handled were covered by the fact and sense of consistency
philosophy, and neither the use of the Aristotelian method nor the brilliant
insight of the most encyclopedic mind has ever been given to medicine,
confined to spiritualism then. Fortunately, here and there said the words of the
little book showed the world from which we have lifted the lines of modern
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(1) The three volumes of Sir Ernest Hartley, the English doctor, should be
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the characteristic style of Professor Gorge, and his second sympathy with
science and health to the interest of the world.

succeeded where our masters failed. But this last and final stage, always of
 slow and painful consummation, ^{is} evolved directly from truths which cannot be
 translated into terms intelligible to ordinary minds. Newton's great work
 influenced neither the morals nor the manners of his age, nor was there any
 immediate tangible benefit that could be explained to the edification or
 appreciation of the "ordinary man" of his day; yet it set forward at a bound the
 human mind, as did such truths as were proclaimed by Copernicus, by Kepler, by
 Darwin, and others. In a less conspicuous manner Harvey's triumph was on the
 same high plane. There was nothing in it which could be converted immediately
 into practical benefit, nothing that even the Sydenham of his day could take hold
 of and use. Not so much really in the demonstration of the fact of the
 circulation as in the demonstration of the method--the Inventum mirabile sought
 for by Des Cartes, the Novum Organum of Bacon--lies the true merit of Harvey's
 work. While Bacon was thinking, Harvey was acting; and before Des Cartes had
 left his happy school at le Flèche, ^{Harvey} he was using la nouvelle methode; and it is
 in this way that the de Motu Cordis marks the break of the modern spirit with the
 old traditions. No longer were men to rest content with careful observation
 and with accurate description; no longer were men to be content with finely spun
 theories and dreams, which "serve as a common subterfuge of ignorance," but here
 for the first time a great physiological problem was approached from the
 experimental side by a man with a modern scientific mind, who could weigh
 evidence and not go beyond it, and who had the sense to let the conclusions ^{emerge}
 naturally but firmly from the observations. To the age of the ^{heaven} ~~ear~~, in which men
 had heard, and heard only, had succeeded the age of the eye, in which ^{men} ~~they~~ had
 seen and had been content only to see. ^{But at last came} the age of the hand--the thinking,
 devising, planning hand, the hand as an instrument of the mind, ^{now} ~~was~~ introduced

W 114

associated where our readers failed, and this last and final stage, always of
 also and painful consideration, evolved directly from trials which cannot be
 translated into terms intelligible to ordinary minds. However, a great work
 influenced rather the course than the manner of his life, nor was there any
 immediate tangible benefit that could be explained to the satisfaction of
 appreciation of the "ordinary man" of his day; yet it was toward a boundless
 human mind, as his such friends as were proclaimed by Copernicus, by Kepler, by
 Descartes and others. In a less conspicuous manner Harvey's triumph was on the
 same high plane. There was nothing in it which could be converted immediately
 into practical benefit, nothing that even the enlightened man of his time could
 of and was. Not so much really in the translation of the facts of life
 attention as in the demonstration of the method—the method of experiment—which
 for by Des Cartes, the method of nature—the great merit of Harvey's
 work. While Bacon was thinking, Harvey was acting; and before Des Cartes had
 left his empty school at Leiden, he was doing scientific research, and in a
 in this way that the method of nature marks the birth of the modern spirit with the
 of tradition. No longer were we to deal content with careful observation
 and with accurate description; no longer were we to be content with facts alone
 theories and dreams, which "serve as a common substitute of ignorance," but now
 for the first time a great physiological problem was approached from the
 experimental side by a man with a modern scientific mind, who could call
 evidence and not be beyond it, and who had the sense to let the conclusions
 naturally flow from the observations. To one side of the method of nature
 had heart and hand only, had understood the way of the method of nature—
 men and had been content only to see, but observation the way of the method of nature
 isolated, physical hand, the hand as an instrument of the mind, the method of nature

into the world in a modest little monograph of seventy two pages, from which we may date the beginning of experimental medicine.

B. W.

of 100 hours up to 35-

But no great discovery in Science is ever without a ~~profound~~ ^{corresponding} influence on medical thought; not always evident at first, and apt to be characterized by the usual vagaries associated with human effort. Very marked in each generation has been the change wrought in the conceptions of disease and in its treatment by epoch-making discoveries ^{as to} in the functions of the body. We ourselves are deeply involved to-day in toxins and anti-toxins, in opsonins, ~~and~~ tulases, ~~and~~ extracts ^{as} a direct result of the researches in bacteriology, and in internal secretion. There were sanguine souls in Harvey's day, who lamented with Floyer that the discovery had not brought great and general innovations into the whole practice of physic. But had the old Litchfield physician lived he would have seen the rise of a school based directly upon the studies of Harvey and Sanctorius, the brilliant reasonings of Des Cartes and the works of Bellini and Borelli. The mechanical school rose in its pride on solid foundations which appealed to practical men with singular force. Very soon that "beatific epitome of creation," man, was "marked out like a spot of earth or a piece of

timber with rules and compasses, "and the medical terminology of the day became unintelligible to the older practitioners who could make nothing of the "wheels and pulley, wedges, levers, screws, cords, canals and cisterns, sieves and strainers, and they cracked their jokes on angles, cylinders, celerity, percussion, resistance, and such like terms which they said had no more to do with physic on the human body than a carpenter has in making Venice treacle or curing a fever." Once accepted, men had a feeling that so important a discovery must change all the usual conceptions of disease. ^{As has been said before} Harvey tells that he had ^a ~~in~~ preparation "Practice of Medicine conformable to his Thesis of the circulation of the blood, and it soon became customary to put in the title pages of works, some reference to the new doctrine. ^{Even} Thus Riolan's Opuscula Anatomia makes an ^{allusion} ~~acknowledgement~~ to it. Walaeus, a keen defender of Harvey, published in 1660 a little compendium of practice, "ad circulationem sanguinis adornata," but there is nothing in it to suggest any radical change in treatment. Rolfinck's Dissertationes Anatomicae, 1650, embracing the older and more recent views in medicine are ad circulationem accommodatae, and even as late as 1690 the well-known Anatomy of Dionis was "suivant la circulation." With the loss ^{work on the} of his Practice of Medicine it is impossible to say whether Harvey's own practice was modified in any way. To part from the spirits and humours must have left his attitude of mind very sceptical, and that his "therapeutic way" was not ~~admired~~ (as Aubrey tells us) speaks for a change which may have set many against him. More important than any influence upon treatment was the irresistible change in the conceptions of disease caused by destruction of the doctrine of ~~spirits~~ spirits and humours, which had prevailed from the days of Hippocrates. While Harvey, as he says, had in places to use the language of physiology, i.e., the language of the day, he makes it very clear, particularly

in the second letter to Biolan that ~~he~~ will have none of the old doctrine, ~~and~~
~~he deliberately replaces the spirits by the blood.~~ *to which the "de indu cordis" dealt dealt the death-blow*

But the moving hand reminds your Orator, Mr. President, of a bounden duty laid upon him by our great Dictator to commemorate on this occasion by name all of our benefactors; to urge others to follow their example; to exhort the Fellows and Members, to study out the secrets of nature by way of experimnt; and, lastly, for the honour of the profession, to continue in love and affection among ourselves. No greater tribute to Harvey exists than in these simple sentences, in which he established this Lectureship; breathing as they do the very spirit of the man, and revealing to us his heart of hearts. Doubtless no one more than he rejoices that our benefactors have now become so numerous as to nullify the first injunction; and the best one can do is to give a general expression of our thanks, and to mention here and there, as I have done, the more notable among them. But this is not enough. While we are praising famous men, ^{still} honoured in their day and the glory of this college, the touching words of the son of Sirach remind us:—"some there be that have no memory, who are perished as though they had never been and are become as though they had never been born." Such renown as they had, time has blotted out; and ~~upon~~ ^{on} them the iniquity of oblivion has blindly scattered her poppy. A few are embalmed in the biographical dictionaries; a few are dragged to light every year at Sotheby's, or the memory is stirred to reminiscence as one takes down an old volume from our shelves ^{of} but for the immense majority on the long roll, our Fellows--names! names! names!--nothing more; a catalogue as dry and meaningless as that of the ships, or as the genealogy of David in the book ^{of} Chronicles. Even the dignity of the Presidential chair does not suffice to float a man down the few centuries that have passed since the foundation of the college. Who was Richard Forster?

To which the "In the Court" shall be sent.
In the second letter to Bishop Doane, I have been of the old doctrine.

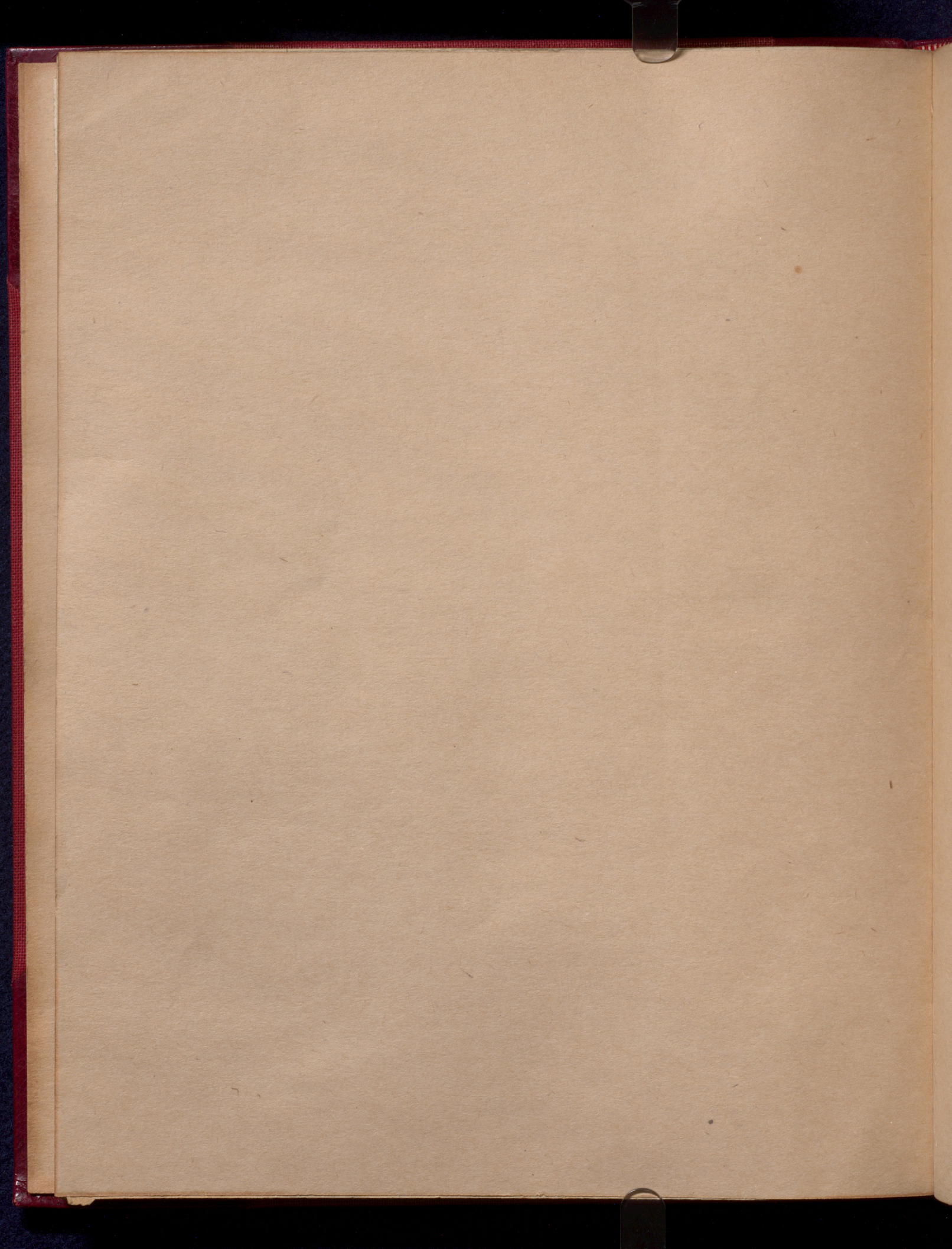
But the moving and restless your Order, Mr. President, of a hundred days
laid upon him by our Great Bishop to concentrate on this occasion by name all
of our benefactors, to urge others to follow their example; to expect the Father
and Mother, to study and the secrets of nature by way of attainment; and,
lastly, for the honor of the profession to continue in love and affection
each other. No greater tribute to Henry Wilson than in these simple
sentences, in which he manifested this love, showing as they do the
very spirit of the age, and revealing to us the heart of nature. Doubtless to
one more than to anyone else, our benefactors have now become so known as to
justify the first suggestion, and the next one and it is to give a general
expression of our thanks and to manifest our love, as I have done. The more
complete and more. But this is not enough. Still we are greatly favored and
honored in their day and the glory of this college, the knowledge of the
son of Starch reminds us: "even there be that have no money, who are perished as
though they had never been and are become as though they had never been born."
Such reason as they had, like the blinded cat; and for the integrity of
children has slightly scattered her paper. A few are excluded in the discipline
discipline; a few are dropped to fight every year at Rochester, or the many
in order to resistance as one takes down an old volume from our shelves;
for the intense reality on the land roll our tables--annual annual cases--
nothing more; a catalogue as dry and meaningless as that of the ships, or as the
genealogy of David in the book of Chronicles. Even the dignity of the
ecclesiastical chair does not suffice to lift a man from the low condition that
have passed since the foundation of the college. Who was Abraham Lincoln?

Who was Henry Atkins? Perhaps two or three among us could tell at once. And yet by these men the continuity and organic life of the college has been carried on, and in maintaining its honour, and furthering its welfare, each one in his day was a benefactor, whose memory it is our duty, as well as our pleasure, to recall. Much of the nobility of the profession depends upon this great cloud of witnesses, who pass into the silent land--pass, and leave no sign, becoming as though they had never been born. And it was the pathos of their fate, not less pathetic, because common to all, that wrung from the poet that sadly true comparison of the race of man to the race of leaves!

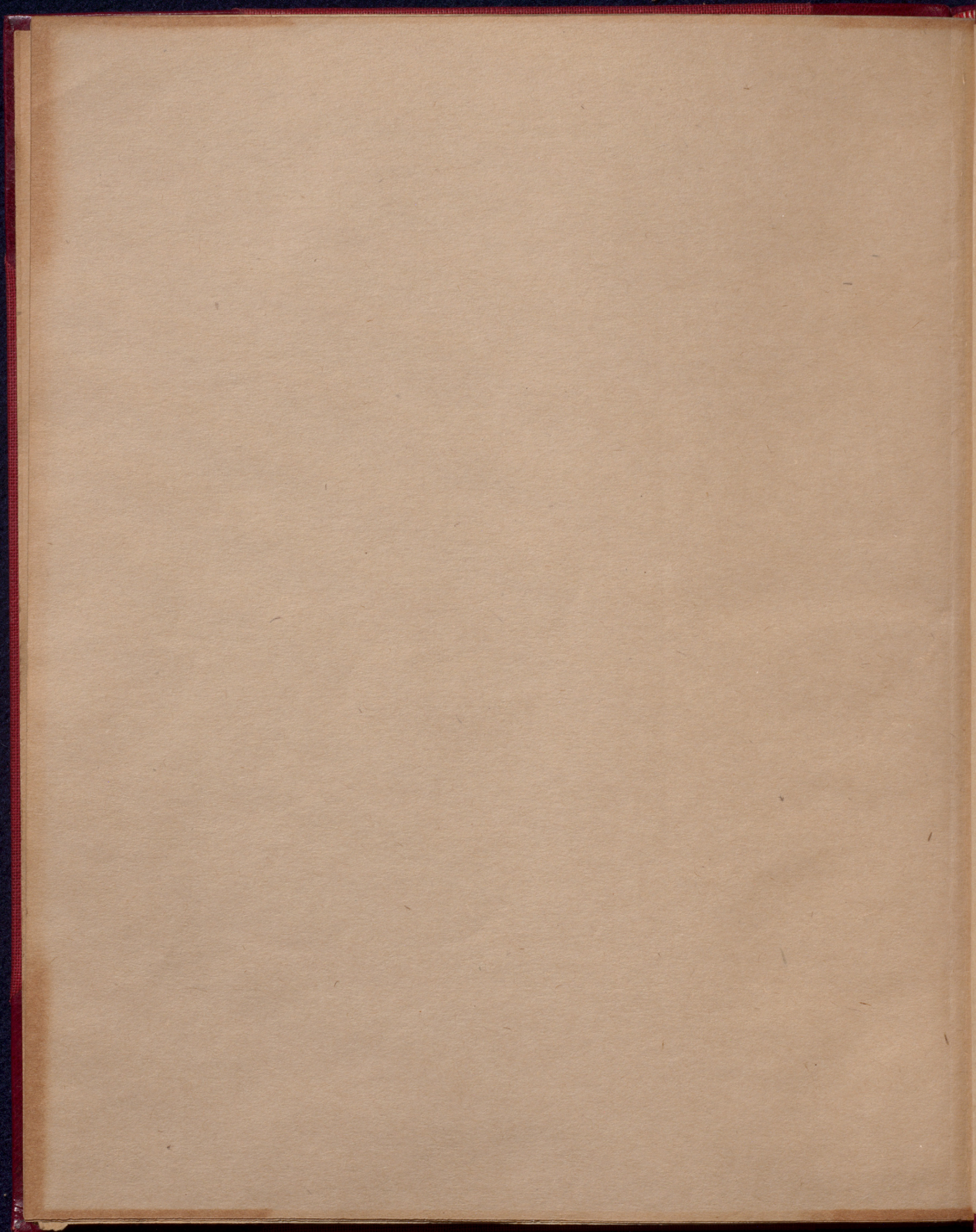
The story of Harvey's life, and a knowledge of the method of his work, should be the best stimulus to the Fellows and Members to carry out the second and third of his commands; and the final one, to continue in love and affection among ourselves, should not be difficult to realize. Sorely tried as he must have been, and naturally testy, only once in his writings, so far as I have read, does the old Adam break out. With his temperament, and with such provocation, this is an unexampled record, and one can appreciate how much was resisted in those days when tongue and pen were free. Over and over again, he must have restrained himself as he did in the controversy with Riolan, of whom, for the sake of old friendship, he could not find it in his heart to say anything severe. To-day his commands are easier to follow, when the deepened courtesies of life have made us all more tolerant of those small weaknesses, inherent in our nature, which give diversity to character without necessarily marring it. To no man does the right spirit in these matters come by nature, and I would urge upon our younger Fellows and Members, weighing well the winged words ~~of Harvey, to cultivate the spirit of our~~ ^{to emulate} great exemplar, whose work shed such lustre upon British Medicine, and whom we honour in this College not less for the scientific method which he inculcated than for the admirable virtues of his character.

...the man Henry Ashurst. Perhaps the only one who could tell at once, and by these men the continuity and organic life of the college has been kept up, and in maintaining the honour, and character of the college, that one in his place, a professor, whose memory is as our duty, as well as our pleasure, to recall. The fact of the nobility of the professor depends upon this great class of witnesses who pass into the silent land--past, and leave no sign, becoming as though they never been born. And it was the pattern of their fate, not less pathetic, because common to all, that wound from the past that sadly broke the continuity of the race of men to the race of to-morrow.

The story of Harvey's life, and a knowledge of the method of his work, would be the first step towards the solution and history to carry out the record and life of the college; and the final one, to establish the love and affection among ourselves, should not be difficult to realize. Harvey's story as he would have been, and his personality, will come to his knowledge, so far as I have read, that the college is not only a great one, but with each generation, this is an old story, and one can appreciate the work that has been done in those days that have passed. Over and over again, we must have maintained high standards, and this is the controversy with a view of the college of the future, for the sake of its future, we should not find it in the heart to any greater power. To-day the college is a great one, and the history of its life have made us all more conscious of those small weaknesses, inherent in our nature, which give diversity to the character without necessarily making it. To us men love the right spirit in those affairs come by nature, and I would urge upon our younger fellows and students, watching well the words of the college, and when we find ourselves, what we find such things upon British history, and when we find the college not less for the scientific method which is indicated in the scientific method of the character.



91 (alt.)



iii + 89 leaves,

for $64 - 5 = 1$ leaf.

$73 - 4 = 1$ "

OSLER

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